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THE NATIONAL GEOGRAPHIC MAGAZINE

New Orleans: Jambalaya on the Levee

Flowing Oil and Booming Trade Give New Orleans Prosperity; Creoles Add the Spice, the Sparkle—and the Mardi Gras

BY HARNETT T. KANE*

With Illustrations by National Geographic Photographer Justin Locke

THE man from Iowa took a breath of New Orleans's balmy night air, let his eye travel from the iron-laced gallery to the small cup of ink-black coffee in his hand, and gave a slow sigh: "This town—why, it makes living a pleasure!"

To other visitors, more rock-ribbed in their respectability, such an observation may sound, of course, slightly suspect. Life is real, they will point out; life is earnest. To this the true Orleanian, of the French Quarter downtown or the Garden District uptown, the Mississippi River front, or crowded "backatown," will politely agree. But he will add: it can also be a lot of fun.

While the Orleanian may, and probably does, work as hard as the merchant in Philadelphia or the laborer in Chicago, he will not make quite so much a thing of it. "You know what counts most?" a Frenchman once asked me. "Just being able to enjoy yourself when you're doing nothing at all."

A good time here may mean an evening on a balcony in the Vieux Carré, watching the shadows against a blue-stuccoed wall, sipping from a cool glass, and letting the rest of America stroll by. Or an afternoon before a fireplace, talking good talk with friends in a converted plantation house. Or a quiet meal in one of several superlative restaurants, or in a private home whose cook treasures "receipts" inherited from *grand'mère*, which she will not divulge to her mistress.

Unlike the so-called typical Texan, the Orleanian seldom boasts. If a stranger fails to appreciate the delights of this city—*eh*, let him fume; he himself is the loser. The Orleanian admits at once that his cuisine *à la créole* is inimitable. Why shouldn't it be? Through the generations his ancestors experimented to make it precisely so.

Like its food, New Orleans is a gumbo—a composition of many peoples, many viewpoints, many riches. It is a great port, child of the tawny Mississippi River and the green Gulf of Mexico to the south; a descendant province of Mediterranean peoples, tenacious of their cultures; a green-hung semitropical town retaining something of the air of a West Indian settlement under a white-hot sun. Above all, New Orleans may be considered an attitude. "There are few things on earth," one man said, "worth a fit of indigestion."

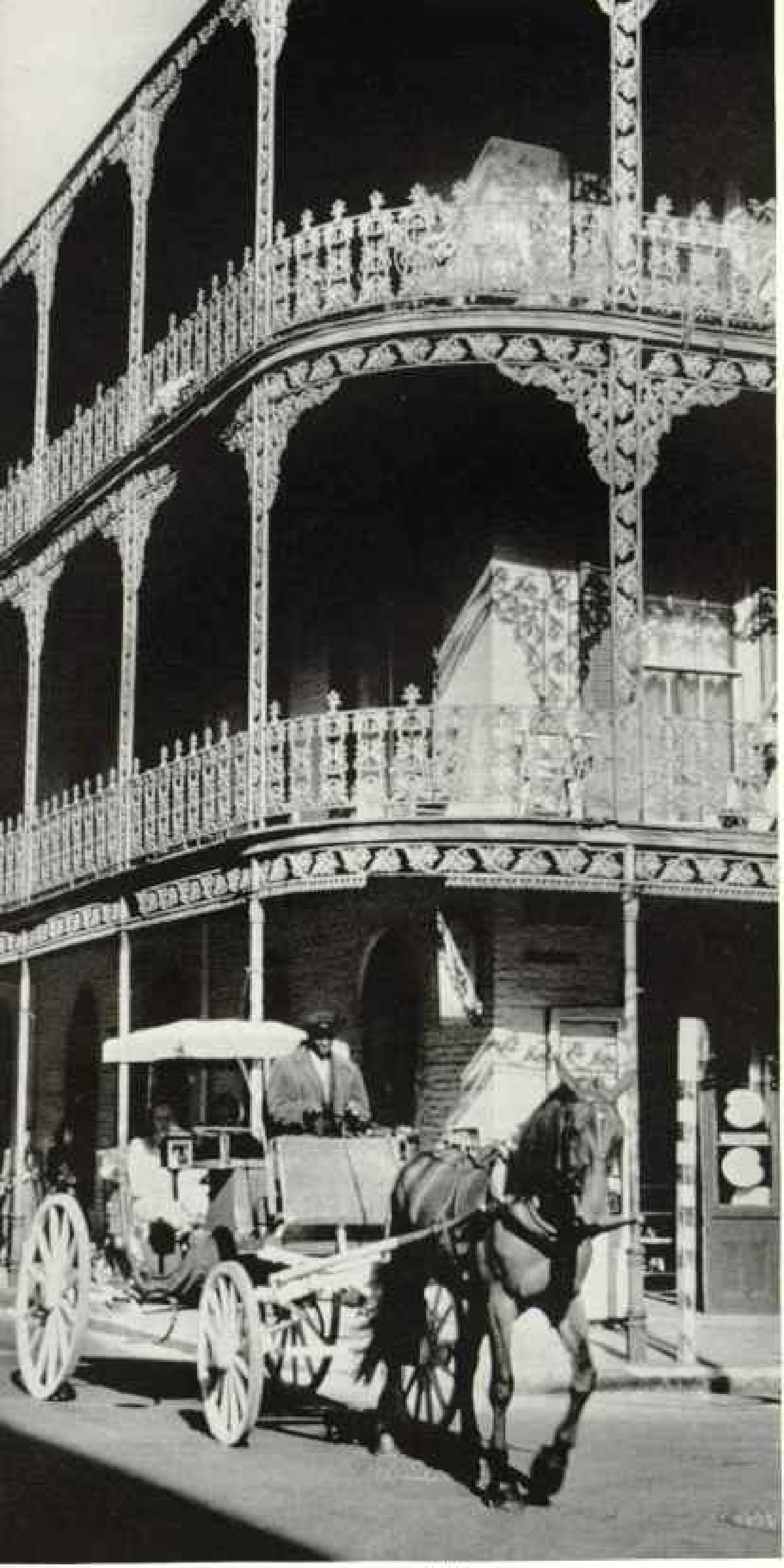
Where France and Spain Meet Brooklyn

The place is, also, a sum of assorted contradictions. Its storied French Quarter turns out to be as much Spanish as French. Its leisurely manners fail to obscure a solid commercial prosperity beyond anything the city has known in the past. On its streets one can hear the soft ripple of Latin tongues or, even more frequently, the pungent notes of Brooklynese.

One can glimpse reasons for its reputation for gaiety; yet New Orleans has long been one of the most devout cities on the continent, with a myriad of churches of all faiths, and All Saints' Day as one of its two great fêtes.

I know of no other American city, in fact,

* Mr. Kane, a native New Orleanian, is the author of many books about the South, including *The Bayous of Louisiana*, *Deep Delta Country*, and *Natchez on the Mississippi*.



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Acorns and Oak Leaves Wreathe Labranche House in Iron

From their balconies in the French Quarter Orleanians watch sights such as this horse-and-carriage for hire. The century-old building stands at 700 Royal Street. Apartments occupy upper floors; shops use the lower.

where men and women advertise so often in the newspapers to seek favors of a saint, to announce that they will honor another saint after the granting of a request for a physical cure, and to thank a third for helping them get a husband for a difficult daughter.

A friend who lives on old Esplanade Avenue told me of a case in point: "The other day two bums were punching it out over there. Well, a nun walks by, and she kind of slips in the street. Both the bums jump up, help her, and ask Sister is she all right. That's New Orleans."

The fact that the bums returned to their thumping a moment later may be taken as another illustration of the city's essential spirit.

The past comes close in New Orleans, and it is a past as tangible as the water-front wharves or the sheathlike leaves of its banana plants.

One section after another has links with a long and variegated history: a tile-roofed landmark; the dusty shop of a beloved antique dealer who served successive eras; a canal left over from the day when commerce floated into the center of the city; the remnant of a crumbled fort; a slightly accented way of speech; a shrug that replaces a question mark.

"Daddy, What's a Hill?"

Newcomers may notice first the flatness of the terrain. In all this deep delta of the Mississippi, for mile after mile of bayou-bordered land, there are no hills—save one, a pleasant little man-made mound put up in Audubon Park in order to help show the children what a hill is. Most of

the city stands barely at or below sea level or river level, in a saucer protected by levees.

A native sums it up with a grin: "The only direction this ground can go is down." A single heavy rain could drown much of New Orleans in a matter of hours; the fact that it doesn't is a tribute to one of the world's great drainage systems, fantastic coils and monsters of pumps that suck out the water in a marvel of engineering.

This feat was not always so easily managed, of course. An older Orleanian with a sense of humor lifts his eyebrow as he denies the charge made by a northern friend that he has webbed feet. "But," he concedes, "I'd never swear that Grandma didn't!"

Floods, Fevers, and Imported China

At various points occurs the phenomenon that may astonish and alarm the uninitiated. Along the levees ships float high above the streets, especially in the Mississippi's spring rise. Riding the water, the vessels lie in reality at a higher level than the people's heads. As long as they do, the people will not forget their master, the Mississippi. Restrained by the mounds of earth, the river through the centuries has brought the city its share of the world's wealth and accepted from it the products it sends to the nations.

New Orleans was making history when most of the rest of the continent had only four-legged life. Spain first made vague claim to all the lower Mississippi, but it was France which began settlement on the Gulf in 1699. About two decades later a French party picked the city's

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A Sidewalk Artist Offers Water Colors While You Wait

William Collins makes the gate to Jackson Square his outdoor studio. "New Orleans," he says, "is the American Paris and the French Quarter is its Montmartre." Background shows St. Louis Cathedral (page 151).

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Mississippi's Serpentine Twists Tell Why New Orleans Is Called the Crescent City

Levees and upriver cutoffs divert floods; pumping stations exhaust rain water. Huey P. Long Bridge (center) carries U. S. Highway 90 across the river. Towers of the business district appear in lower right.

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Lee Orr, Industrial Aerial Photos

40 Miles of River Front Welcome Shipping from the Globe's Far Corners

This year New Orleans celebrates the 150th anniversary of the Louisiana Purchase, of which it was a part (page 148). Recreating the past, flatboats will drift down the Mississippi with northern cargoes.

actual site. It lay in a quaky terrain—fairly high as the region went, yet, it turned out, often flooded from two directions. In the words of an ancient from the last century: "If the river didn't get you from the front, Lake Pontchartrain watered you from the rear."

Flood, fever, pestilence, neglect from Europe . . . *La Nouvelle Orléans* fought them all and managed to survive, a Gallic outpost some 110 winding miles from the Gulf.

At an early date luxury appeared. Old records support accounts of imported china, carved furniture, silks and damasks, and spices.

Kings granted estates on the Mississippi, and whispers told of court favorites dispatched regretfully to Louisiana, with small fortunes as consolation. Younger sons of high family arrived to make their way beside peasants and earnest bourgeois householders anxious to establish a name for themselves.

Accent on Amour

Always, however, the gaudy, the raffish note. The Scotsman financier-gambler John Law floated his Mississippi Bubble, and his agents scoured French jails and the streets for unwilling settlers. Thousands died on the Gulf sands, cursing Louisiana; other thousands, hardier or merely luckier, survived. Smugglers, pirates, traders, swindlers, remittance men—New Orleans swallowed them all in its highly flavored jambalaya.

The first New Orleanians had a certain Latin attitude—frankness, or simple awareness between man and woman; an unpuritanical liking for things of the senses; a fondness (some thought it a mania) for games of chance.

Of Bernard de Marigny, golden boy of his generation, people said his philosophy was *largesse*, *finesse*, and *amour*, especially *amour*. Putting up a subdivision, he named streets for girls whose qualities he appreciated; one he frankly called *Rue d'Amour*, and the next *Rue des Bons Enfants*, for the good children who logically follow love.

Treaties of 1762 and 1763 saw Louisiana tossed from France to His Hispanic Majesty. The Spaniards clanked in, took over management, married the French girls, and were absorbed in a mixture of the two nations. Thus arose the Creoles. In New Orleans parlance, the term denotes simply a white descendant of the original settlers, French, Spanish, or both. The Creole, let it be well noted, is the Knickerbocker of Louisiana.

Another 40 years, and the Latin flavor intensified. Up the Mississippi, the bayous and tributaries, advanced a civilization sharply different from that of the earnest New Englander or the Virginia cavalier, the buckskinned westerner or farmer of the plains. The Franco-Spanish settler had a gift of laughter, a liking for relaxation in the shade, but also a will to set up the good life for himself. He built châteaux on his plantation acres, raised sugar cane, and kept the homeland green in memory.

Yet, however the Louisianian felt about it, change broke upon him. World politics shifted. In 1801 Spain returned Louisiana to Napoleon, who sold it to the United States in 1803. For $15,000,000 (plus interest) the upstart democracy acquired a vast territory, the heartland of America, a great part of which it hardly wanted. Nor did many of the Anglo-Saxons approve of this peculiar New Orleans, with its equally peculiar people.

Thus started a division, both geographical and spiritual, which continues in a limited way even a century and a half after the Louisiana Purchase. The sophisticated Creole sniffed at the American *arriviste* and called him a pig; the American thought the Creole a peacock. Some Americans announced grandly that they did New Orleans a favor by coming here. But, among the natives, to say that a certain fellow was American . . . *Monsieur*, that was an insult, clear, unmistakable, premeditated.

There followed years of clash, competition—and growth. For generations the grassy expanse of Canal Street provided a line of separation. Below it remained the earlier section, the "Old Square," with narrow Creole houses; above appeared the new Anglo-Saxon area, wider-spaced, less "European" in look.

Creole jostled American in sugar growing and sugar handling, law, politics. They traded insults, and many died in tragic duels whose byword was "pistols for two, breakfast for one." A strange experiment found the city split for a time into three separate "municipalities." The Americans put up their flamboyantly columned St. Charles, one of the great hotels of the hemisphere. The Creoles answered the challenge with the lustrous St. Louis Hotel, a Continental-style caravansary.

How to Creolize a Conqueror

The energetic Americans won the race; yet gradually, in many important respects, the conquered ones seemed to be conquering their conquerors. A Creole friend puts it this way: "We're like the Chinese—a pervasive race, and an enveloping one." As with the earlier Spanish arrivals, the newcomers took as brides the daughters of the natives. Scotsman, Irishman, Englishman, Yankee from Salem, Kentuckian, New Yorker, Carolinian—each merged with the Creole, and the original New Orleans strain maintained itself.

These new Orleanians practiced the quaffing of the strong Louisiana coffee, managed to en-

National Geographic Photographer J. Baylor Roberts

Rex's Floats Barely Squeeze Through Mardi Gras Merrymakers Cramming Broad Canal Street

Beauty, vanity, and fun ride this caravan (pages 159-163, 183). The costly superstructures will never roll through New Orleans again, for carnival organizations present new themes every year.

joy an afternoon in the courtyard, and savor, without too stringent an attack of conscience, the delights of the city's many attractions. Some even found that it could be good business to interrupt a heavy morning at the office with a cup of *café*, over a commercial deal. They became, according to a favorite New Orleans word, "Creolized." In time their children's names might be Brown or Brandon, but the air and inflection were Livaudais or Boisblanc.

At the same time the new American influence made the city bloom as it had never done. Up the river edge of New Orleans and down it, to the back and across the Mississippi as well, sprang suburbs, or *faubourgs*, villages, outlying settlements that vied with and in time supplanted the strung-out plantations. Through the 1830's and '40's and '50's the goose hung quite high.

Down the Mississippi floated the teeming wealth of America: hides and grain, timber, articles raw and articles manufactured, and, not least, cotton bales, often piled so high on steamboats that the vessels appeared about to capsize. These were the glory days of the river packets, the *J. M. White*, the *Duke of New Orleans*, the *Sultana;* days of smiling gamblers, of whole families moving down to the sugar country, of excited men on the way west to Texas and also to Latin America.

New Orleans had become, among other things, the country's port of expansion to new frontiers; it spawned a hundred revolutions, a thousand whispered projects for invasions to the south or west.

In a single decade—1830 to 1840—its population jumped from 46,082 to 102,193, making New Orleans the third largest city in the country. Only New York and Baltimore were larger. In exports of domestic products its port competed with New York's as the Nation's biggest. Boastfully, New Orleans claimed to own or control half of U. S. capital. Chicago, St. Louis, and the others —New Orleans looked on them as frontier outposts.

Flavor from a Dozen Nations

To the Americans, New Orleans had a redolence, a flavor of the exotic. The locale had long had strong German influence, a "*Côte des Allemands*" along the river and German colonies below the original French Quarter, with their own churches, *volkfests*, and, ultimately, French relatives and a French accent!

There were Chinese, and Greeks, and also Acadians, or Cajuns, descendants of doughty Nova Scotia French exiled to Louisiana. These last were zesty, black-eyed people possessed of enormous vitality. Many migrated from Bayou Lafourche to New Orleans.

Then, too, not least, the Irish. They gave their name to the roughly defined "Irish Channel" near the American water front. In the 1830's the Americans financed a New Basin Canal, requiring the work of thousands. Irishmen were imported, and epidemics of yellow fever and cholera cut them down, so that their bones lined the edges of the waterway.

Still, many survived; and, in a flush slave economy, an Irishman was far cheaper than a dark bondsman. If a slave died, his owner lost dollars; when an Irishman sank to the ground, God's kingdom had a recruit.

Later, Filipinos arrived to take places in the shrimp-drying industry of the bayous, setting up Oriental settlements of platforms like palmetto-thatched matchboxes on stilts over the water.* Italians emigrated to settle near the water front or on the plantations. Yugoslavs, clannish, untalkative, rode to points nearer the river mouth to make the planting and digging of oysters their own.

The Paris of America

Before the Civil War it seemed that all the world rode to New Orleans, to grin and tell about it afterward. The Creole town had captured the mind of the Nation as a place with a flavor and a color all its own. Paris of America, good-time capital of the U. S., cried some; hell on wheels, Sodom and Gomorrah on the steaming mud flats, sniffed others.

Mrs. Andrew Jackson expressed the latter view when she wrote home: "Great Babylon is come up before me. Oh, the wickedness, the idolatry of this place! . . . Oh, farewell. Pray for your sister in a heathen land." She saw, to be sure, only the surface, and part of that.

As the years passed, New Orleans could claim rank as the first American municipality in which opera was established on a permanent basis with a resident company. While such enterprises struggled feebly in New York, New Orleans supported two French companies, and, eventually, uptown American houses presented a variety of visiting troupes.

A Golden Age of the theater had also dawned here. Authorities described New Orleans's St. Charles as the country's grandest playhouse. Stars yearned to act here. Salaries went high, and prestige rose, for New Orleans was an actors' paradise, a volatile town that loved the mummers and did not mind letting them know it. Women tossed handkerchiefs, corsages, jewels at favorite players. One ecstatic Frenchman leaped to his feet and almost threw himself out of his box. (Friends caught his coattails.)

* See "The Delectable Shrimp," by Harlan Major, National Geographic Magazine, October, 1944.

Kodachrome by National Geographic Photographer Justin Locke

A Lady at Leisure Savors the Serenity of New Orleans from Her Cast-iron Balcony

Triple-spired St. Louis Cathedral, religious center for Louisiana's Creoles, drowses at the end of Orleans Street (page 152). Three successive churches have stood on its site since the French arrived in 1718.

Jackson Square: Heart of the Old French Quarter

American for a century and a half, New Orleans lived long enough under France and Spain to absorb the flavor of their Latin cultures. That heritage may be detected still in the pungent aroma of bouillabaisse, the green seclusion of patios, the subtle lacework of iron balustrades, and the lighthearted madness of Mardi Gras (pages 159 to 163).

Typical of the city's gift for architectural compromise are the Cabildo and the Presbytère, the twin edifices here flanking the St. Louis Cathedral. Their massive outer arches and inner stairways are clearly Spanish; mansard roofs are as obviously French.

These old structures have witnessed their share of history. In the Cabildo (left), the French in 1803 ceded to Americans the Louisiana Territory—827,192 square miles from the Mississippi to the Rockies, from the Gulf to Canada. In the Cathedral, Andrew Jackson heard a solemn *Te Deum* sung to celebrate his 1815 victory over the British at near-by Chalmette (page 164).

Twin Pontalba Buildings, the city's first apartment houses, face the square on either side.

Sidewalk Critics Appraise the City's Art and Artisans

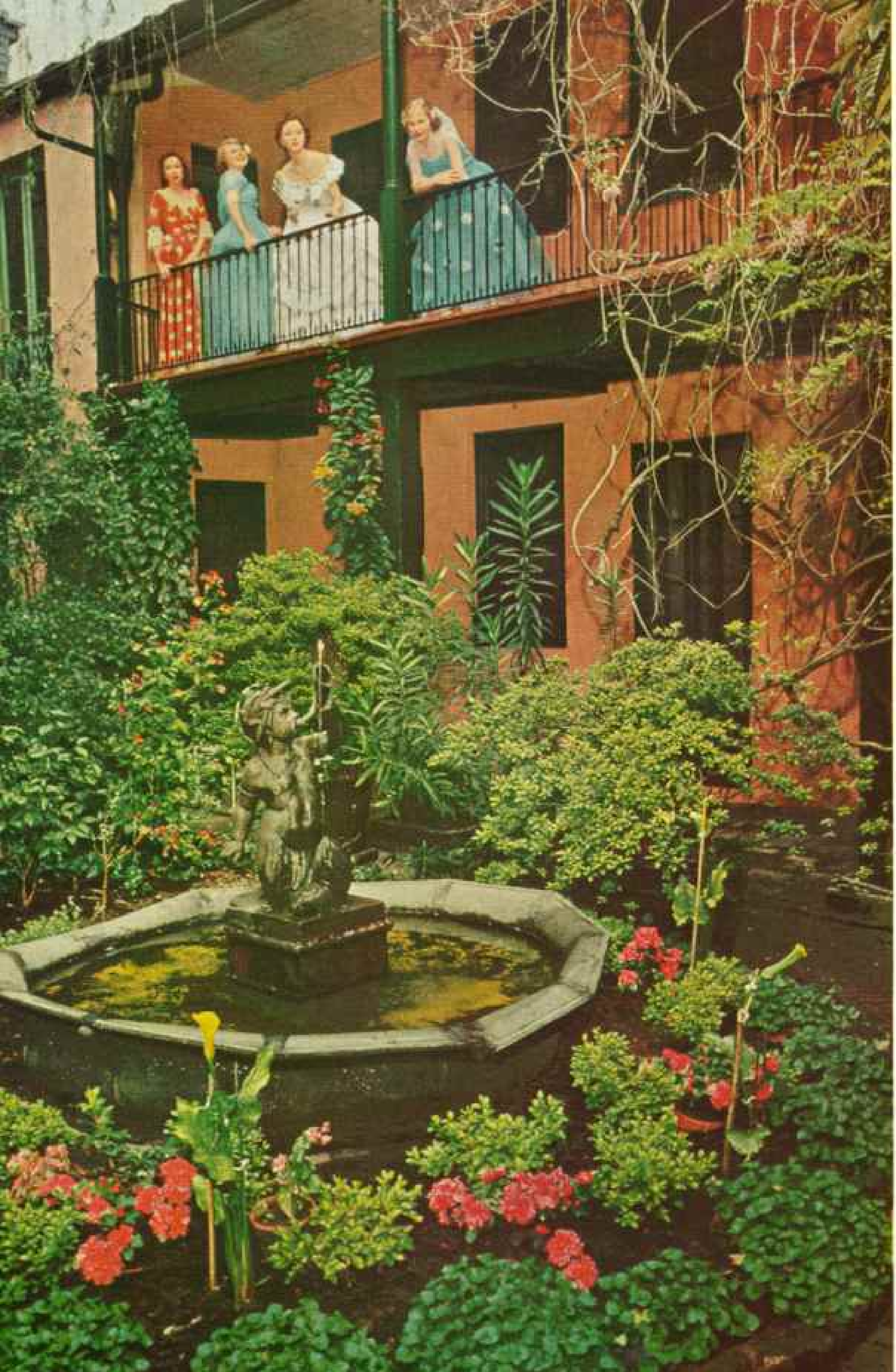
For low rents, high talk, and hospitality, American artists have traditionally turned to the older sections of three cities: New York's Greenwich Village, Paris's Left Bank, and New Orleans's French Quarter, the Vieux Carré.

In this third area, writers and painters discovered old houses, apartments, and slave quarters which made up in charm what they lacked in plumbing. Now they sometimes pay the penalty of their appreciation: eager homeseekers, antiquarians, and curio dealers flocked to the Vieux Carré, redecorated its old buildings, and raised rents.

← Each spring and fall, however, those painters and craftsmen who can afford to remain hold an outdoor exhibit along narrow "Pirate's Alley," which runs beside St. Louis Cathedral (opposite). Prizes are modest: $10, $5, and a ribbon.

→ Bevolo Metal Crafts employs, even for sales duty, only men skilled in the smithing of copper, brass, and iron. This New York couple gazes at antiques and reproductions through the show window on Royal Street.

Kodachromes by National Geographic Photographer Justin Locke



Chartres Street Takes Its Lacy Iron Grillwork from a Style Established in Colonial Days

First ironwork was often designed in Louisiana and wrought in Spain. But native smiths soon developed a taste for these delicate patterns. Their creations eventually became the hallmark of New Orleans.

← Girls in ante bellum dress lounge in the old-time slave quarters of the Montegut mansion, 731 Royal Street, which was built before 1799. The courtyard is partly enclosed by the wall of an old convent.

Skyscrapers Rest on Piles Driven Deep into Oozy Muck. A Mississippi River Air View Looks Up Canal Street, Once a Waterway

Flat New Orleans has many streets below river level. The Nation's second port in dollar value of foreign commerce, it handles 23 percent of our coffee, most of which passes through the big terminal at left. Queued-up automobiles head into the ferry terminal (right). The *President* waits for excursionists.

5½ Miles of Glass Girdle Pan-American Insurance Building

During the first decades of the 19th century, New Orleans enjoyed wide prosperity. Cotton and hides, timber and grain poured down the Mississippi in ceaseless flood.

Then came Civil War and blockade. Warehouses yawned vacantly; deserted mansions gaped on weed-grown gardens.

Not for half a century did New Orleans regain its place in the sun. Then trade picked up, oil gushed from offshore wells, and shipbuilding boomed.

Now the New Orleans area, which already possesses a large sugar refinery, can look forward to the completion of an aluminum plant, a match factory, and oil-refinery expansions.

Symbolic of the city's resurgence is this office building on Canal Street. Galleries and 592 aluminum louvers deflect the sun's rays in summer but flood the interior with light in winter. Air-conditioning zones stabilize temperatures.

Kodachromes by National Geographic Photographer Justin Locke

Dinner at Antoine's: a New Orleans Rite

To most globe-trotters it would be as unthinkable to visit New Orleans without dining at Antoine's as to leave Paris without a look at the Louvre.

Founded in 1840 by Antoine Alciatore, creator of *bœuf Robespierre*, this gourmets' oasis is still run by an Alciatore—grandson Roy—upon certain polite but firm principles:

No "palate-paralyzing" cocktails. No condiments. No music ("Dinner dancing is an abomination"). No bargains in food and no table d'hôte. No ice water (unless the customer insists). No patience with an insolent waiter ("He is a disgrace to the profession").

← World-famous are Antoine's oysters Rockefeller, here being wafted to a customer by waiter Frank Roz as chef John Daigle carves a roast.

↓ Antoine's offers a wide choice of vintage wines.

Kodachromes by National Geographic Photographer Justin Locke

Delirious Subjects of a Carnival King Grasp at Favors Flung from a Mardi Gras Float

Between Twelfth Night and Lent, New Orleans celebrates with balls and masquerades, parades and pageants. On Mardi Gras, Fat Tuesday, thousands throng the streets to stare at floats and listen to bands.

↑ **Masked Queen of Venus Presides Over Her Krewe's Float**

Giddy Mardi Gras captured New Orleans more than a century ago and has reigned unchallenged since. The idea, lost in pagan antiquity, came to Louisiana with the French.

Organizers of the masquerades and processions are the krewes, private clubs which exist for no other purpose than to build the floats and direct the balls.

Favorite tune of Mardi Gras bands stems from the 1872 visit of Russian Grand Duke Alexis Alexandrovich Romanov, who was enamored of an American actress. To oblige him, every Carnival band played her theme song:

If ever I cease to love,
If ever I cease to love,
May the fish get legs and the cows lay eggs
If ever I cease to love,

Here on the reviewing stand in front of City Hall, Mayor deLesseps S. Morrison speaks into a microphone. The Queen likewise holds a "mike."

← The Mystick Krewe of Comus, formed in 1857, is the senior of some 60 festive groups. Here King Comus's masked krewemen dance at the ball closing the season.

Kodachromes by National Geographic Photographer Justin Locke

In Lofty Isolation, King and Queen of Comus Survey Their Brilliant Court

Most coveted of all social honors in New Orleans is that of presiding over a krewe like Comus's. The entertainment bill may strain a king's finances, yet he rates the cost paltry beside the prestige.

163 Kodachrome by National Geographic Photographer Justin Locke

A Week of Frivolity Ends. Masks and Costumes Will Be Laid Aside on the Morrow

King of all carnival kings is Rex, Lord of Misrule. Shortly before midnight he and his court call upon Comus. Their visit signals the start of Lent and underscores the Latin origin of *carne vale*—farewell to the flesh.

Mossy Banners Wave Over Boys Re-enacting Battle of New Orleans

Tradition fastens upon this moss-hung grove the name Pakenham Oaks, so called from Sir Edward Pakenham, British general supposed to have died beneath their branches after his defeat in 1815 by Andrew Jackson at Chalmette, a few miles away. A State marker, which calls them the Versailles Oaks, says they were planted in 1783. Their antiquity is disputed, however, by some historians, who contend the trees were set out by a planter several years after Pakenham's defeat.

These two rows of oaks number 70. As many more grow in outer stands. Spanish moss shrouding their branches is an air plant (epiphyte) belonging to the pineapple family.

← Oak Alley plantation's 28 Doric columns are matched by a corridor of 28 huge oaks.

Jacques Telesphore Roman, who built the mansion, named it Bon Séjour (Good Sojourn), but passing river-boat captains called it Oak Alley, and the name endured. Mrs. Andrew Stewart (second from right) serves tea on her lawn near Vacherie.

Kodachromes by National Geographic Photographer Justin Locke

Kodachrome by National Geographic Photographer Justin Locke

Hostesses in Ante Bellum Gowns Greet Visitors to Baldwin Lodge During Spring Fiesta

Working in the lodge's clay pits near Slidell, slaves once made bricks that went into many a southern mansion. Long ago the old plantation house was shipped to New Orleans. Union troops bivouacked beneath the oaks.

But sooner or later natives and visitors alike headed for the water front—"The master street of the world," as an enthusiast termed it. For four or five miles the levee bustled with ships and men and goods. The line of craft, curving with the river, lay two and three deep. For most of the distance a man could step from vessel to vessel without once touching shore.

Here were arrogant white steam packets, ocean-going ships of black and gray, flatboats, western river boats. A caller confessed: "I shall want a microscope when I return to England, so miserably small and petty will seem all its features." After New Orleans, many places looked small, and also drab.

War Ends an Era

Yet catastrophe edged steadily nearer. By the 1850's railroads and canals were cutting into the river trade; it continued to grow, but not quickly enough. In 1861 the city linked itself with the Confederacy, though many influential elements thought its destiny lay more logically with the Union.

War brought blockade, early occupation, and destruction of established routes of trade. Slowly at first, but inexorably, the acid of poverty ate into the big houses. The pillared doorways went neglected. On waterfront streets grass sprang up between the cobblestones.

Born in 1910, I remember the sight of vast, empty warehouses, a few scattered bananas rotting in the summer afternoon. As a boy I shivered in passing the abandoned St. Louis Hotel, a forgotten ruin of a place; children of the day told stories of ghosts that groaned inside the boarded-up wreck.

Men who had been lawyers took jobs as day laborers. Families had to leave 20-room houses on which they could no longer pay even the interest charges. Much of the once-elite French Quarter became a kind of slum, with impoverished families crowded into former drawing rooms, oil stoves smoking beneath ceiling rosettes from which chandeliers had hung.

Then New Orleans, which had never stopped struggling, drew itself up again, almost by its bootstraps. Its superb location, its position at the end of the funnel into the Nation's heart, its place in relation to Latin America and the world beyond, began to count.

Now the town and its people have come again into their own. The oil industry, booming on all sides, has invaded New Orleans, with new skyscrapers for offices and thousands of new employees (page 157). Oil derricks float out into the Gulf in a new frontier of sea-going drilling operations. Within a 100-mile radius of the town oil flows from some 100 fields, where 3,000 or more oil and gas wells are already sunk (page 177).

Since World War II, investments in new or expanded industrial facilities in the area have reached nearly $700,000,000, almost half of it in one year. The "oversupply of moisture" about which Orleanians have chuckled has proved a boon in drawing industries that require a great deal of water. International Harvester has erected a $4,000,000 twine mill on the river front, to employ 750. Kaiser Aluminum & Chemical Corporation has purchased 280 acres on the Mississippi for a $150,000,000 aluminum plant, eventually to use 2,250 workers (page 182).

Chrysler Corporation of Detroit is moving in with a multimillion-dollar contract to produce air-cooled Continental V-12 engines for Army Ordnance. The Delta Match Corporation, subsidiary of a Swedish match company, has completed a $2,000,000 plant, the deep South's first wooden match factory. And near the city Pan-Am Southern Corporation is embarking upon a $9,600,000 expansion program, including erection of a "cat cracker" for high-octane refining.

New apartment facilities, badly needed, are going up; so are new hospitals and expansions of hotels. Industry is undergoing further diversification. The port itself is re-emerging as the country's second in dollar value of foreign commerce; today it boasts more traffic than New Orleans ever knew before.* From the bayous and lakes pour millions of dollars in crabs, shrimp, muskrat pelts.

Cotton, rice, and sugar cane provide work and cash for other thousands of people. The Chamber of Commerce talks proudly of the fact that New Orleans gives the country a sizable supply of its men's summer clothes; that the area has one of the world's largest sugar refineries and produces much of the Nation's industrial alcohol. The world's greatest cane-syrup plant operates near by.

In a word, sir, New Orleans is doing all right.

The Color Does Not Fade

Yet, in spite of these glossy statistics and these shifts in industry, the old place maintains its identity and its coloration. Some businessmen, to be sure, with a blind eye to the historic, are still bent on "modernizing" the town. Nevertheless, only a few echo the reckless gentleman who announced he would like to set fire to the whole French section and replace it with "brand-new houses."

The heart of this French area, of course, is the Vieux Carré, which stretches below

* See "Louisiana Trades with the World," by Frederick Simpich, NATIONAL GEOGRAPHIC MAGAZINE, December, 1947.

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Ladies in 19th-century Dress Hold Court in the Old Spanish Custom House

Spanish authorities used the premises at 1300 Moss Street as a lockup for contraband runners. Marvelously preserved despite two centuries of age, the house is now the residence of Dr. and Mrs. I. M. DeMatteo.

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Fresh Immigrants from Europe Flow Through the Racial Gumbo of New Orleans

Frenchmen and Spaniards, mingling, stamped their Creole flavor on southern Louisiana. Nova Scotia's exiled Acadians, known as Cajuns, increased the French-speaking population. Slaves came on ships from Africa; American frontiersmen floated in on Mississippi River rafts. Germans, Irishmen, and Italians established colonies. Filipino shrimp fishers built houses on stilts (page 150). These newcomers stand in the New Orleans Port of Entry; most of them are bound for destinations in other parts of the country.

Canal Street half a square mile. For nearly half its existence much of the city's life centered here, within the once-walled town bordered by these four streets: Canal, a former no man's land, a place of rope-walks, stagnant ditches, and a few Americans; Esplanade, the parade ground below; North Rampart, thoroughfare along the walls toward the swamp; and Levee or Decatur, near the water front.

French Quarter: Back in Style

Recent years have brought growing realization of the comfort, the rare design, the "rightness" of the Vieux Carré houses. Families that moved out during the day of decline have gone back. Professional people, newly arrived, have sought out apartments. The restoration movement has increased through war years and peace, and whole lines of buildings have triumphed over shabby neglect.

Through everything, a few of the original Creoles have stayed quietly in their houses, defying time and custom. One elderly woman smiled philosophically: "Remember when they said I was practically 'alone' down here? Well, I'm in the fashion again!"

In the Vieux Carré one can still find single houses, clusters of buildings, and even rows that look much as they did some 150 years ago. The worn gray St. Louis Cathedral, focal point of Roman Catholicism in the Mississippi Valley, occupies a site on which a church has stood since around 1718.

Of about the same age is the adjoining Cabildo, center of earlier Louisiana government, in which the vast Louisiana Purchase area was formally transferred. On the other side stands the Presbytère, the Cabildo's twin in design, though completed later, and for years part of the church's property. Of stuccoed brick, rich examples of Spanish de-

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Orleanians Want their Chicory Coffee Black, Strong, and Free-flowing

It's not coffee, residents say, unless the spoon stands up in the cup. They drink their drip-pot brew before, during, and after meals. The city claims the largest per-capita consumption of coffee in the country. This modest but celebrated cafe, the Morning Call, serves visitors in the old French Market.

sign, both have monumental arches below and magnificent stairways inside (page 152).

But here too the French influence is evident; the second floor is marked by a touch in line and ironwork clearly Gallic. And years later Orleanians tacked on the oddly contrasting French mansard roofs. The buildings have, as New Orleans says, Spanish feet, a French head, and a mixed middle.

Sidewalks Are "Banquettes"

Along near-by Chartres, St. Philip, Dumaine, and other Quarter streets stand older buildings distinctly of New Orleans (page 155). A few single-storied ones are *briquetées entre poteaux*, bricked between posts, with cypress timbers to strengthen the original soft brick. Dating back to the late 1700's or early 1800's, they have low, sweeping roofs at back and front and served originally as home or store or both; old-time Orleanians believed in such economy and convenience.

More elaborate are later stuccoed brick structures, two-storied or higher, centered about their courtyards, with an outer wall that rises on a line with the sidewalk. (In New Orleans, incidentally, only a visitor calls it a sidewalk; here it is *banquette*.) High-ceilinged, with long windows and doors to permit the air to flow through, they are admirably suited to the warm climate. They also permit privacy: the family lived, and still lives, toward the patio, with flagstoned walks among the gardens and flowering shrubs.

The courtyard, like the house, has much of Spain, something of France, and a great deal *à la Louisiane*. Here, his back to the street, the resident may live much of his life among his green things. It is one of the city's happiest patterns of existence, to which more and more residents are turning, or, more properly, returning.

Wooden-banistered galleries frequently border the courtyards, but it is the iron-bordered ones, facing the street, that give the Quarter houses their crowning exterior touch. Two-

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International Trade Mart Gives the City a Shop Window on the World's Business

Showrooms at the Mart display the wares of 11 countries in Europe, Latin America, and the Pacific. One block away, the International House offers a friendly place for lunch and dickering. There interpreters, trade advisers, and multilingual stenographers stand ready to help buyers and sellers explore new markets.

storied in most cases, with tall posts, they dominate the façades, sketching a lacelike tracery of leaves and flowers with waist-high railings, panels of filigree, and a final design high against the sky (page 151).

The French Quarter has been described as America's greatest open-air museum of ironwork. While most of the metal is cast iron, there are numerous examples of the hand-wrought variety, of leafy delicacy, yet intact through the decades.

Spain has left a clear mark on these houses, with their paved courtyards and massive arched openings. Yet, invariably, Spanish flavor is tempered with suggestions of French taste in paneled folding doors, cornice work, or placement of rooms. A third ingredient in the architectural potpourri is American. Even in the Quarter the interest in Greek Revival architecture led to an occasional columned doorway or ironwork in a Greek motif.

In many houses there opens, at the side, a wide carriageway with thick wooden doors. Flagstoned, the passage extends the length of the residence, a cool tunnel ending in a pair of scrolled iron gates, beyond which lies the sun-splashed greenery of the courtyard.

Over the galleries, vines may twist among the iron scrolls; flowers spread in tropical profusion. Here, in its semi-outdoor living room, a family may have its meals or play cards, while a bird swings in an elaborate cage near by and a dog sleeps on the shady floor.

Greek Temples Have a Creole Trim

From a high floor or an attic Orleanians may look down on panoramas of shifting roof lines reminiscent of Paris. With walls rising against walls, each house is a separate unit, an individual blue or warm pink or purple; and yet there is a fundamental harmony, a unity of adaptation to scene and weather.

Branching out from the Vieux Carré, streets and houses tell stories of social change. North Rampart, at the edge of the Quarter, has a

final few iron-balconied structures and white-columned ones standing uncomfortably among filling stations, hot-dog stands, and bars. St. Charles Street, which soon becomes St. Charles Avenue, was a main thoroughfare of Anglo-Saxon advance, with Magazine and Camp, Carondelet and Baronne as auxiliaries. Along them still remain white or slightly grayed houses that bespeak the non-Creole civilization.

Here begins the rule of the neoclassic, subtly modified by New Orleans climate and French-Spanish influence. Though Mr. Johnson might not be on speaking terms with Monsieur Jean-sonne, he or his architect liked the local use of ironwork, and it soon appeared between the pillars of his Greek temple. Near a fluted Corinthian column he placed a two-story gallery in Creole manner; inside, too, the arrangements had a look of Creoledom.

Greek Revival—with Gardens

About Lafayette Square and Annunciation Square rose a line of mansions of increasing elegance. Many have gone; some stay on. For more than a hundred years Lafayette Square has been dominated by City Hall, often termed one of the finest examples of Ionic temple style to be found in America.

Then, beginning at Jackson Avenue, starts the Garden District, heaviest concentration of buildings in the Greek Revival mode, the "American answer to the French Quarter."

These Anglo-Saxons wanted no lines of close-built houses rising from the *banquette*, facing the courtyard in the back. They had land, and they were going to use it as they would have done elsewhere—home in the center, surrounded by lawns, trees, and flowers and fronting toward the street itself.

There emerged as a result the biggest residences New Orleans has seen, some wood, others brick, painted white or gray or in shades of color, often occupying half-squares or more. Varying in details, they shared a general pattern.

Wide galleries made it possible to keep many doors and windows open through the frequent rains. Rooms also were adjusted to the locale, sometimes 16 or 18 feet high, with folding doors to be thrown open to provide double chambers. Broad halls, marble mantels, paneled outer doors with fanlights and pilasters of their own provided further finish to a design for commodious living.

The surroundings gave the section its final flavor, with thick oaks that trailed branches toward iron railings, vines climbing up the pillared galleries, and flowers against the iron fencing that surrounded the property. Magnolias were planted, pecans and palms; crepe myrtles held clusters of pink blossoms, with sweet olives and figs among the rosebushes that seemed to thrive especially in this rich soil. It was, in truth, a district of gardens.

From tranquil houses like these there once went forth white-faced men to engage in exercises in legalized murder—*affaires d'honneur*. Nowhere in America was it easier to be killed by sword or pistol. A dozen duels a week in a favorite meeting spot were only average. A lawyer of French background declared he had been a principal in 24 of them and listed them all. An American, jealous of his standing, brought his own total to 20. One fought three duels with the same rival.

In the eyes of many, a man had not really reached maturity until he had fought a duel. Once, hearing a noise, an individual looked in the direction of a stranger and was challenged to a meeting because of his "insulting attitude." A new arrival expressed an unfavorable opinion of New Orleans coffee; on the field the next day, he felt a sword through his middle. A newcomer in a restaurant, sitting near a fencing master, by chance ordered the same three courses as the latter. The master decided he was being mocked; a little later he sent the fellow to his grave.

One or two New Orleans authorities published manuals of dueling etiquette—how to give offense politely, how to be offended with dignity, how to kill or be killed. Too much vulgarity on an offender's part and there should be no meeting. A man who did not know how to insult properly was no gentleman; and no one should duel with a social inferior.

Swaggering lords of the scene were the *maîtres d'armes*, swarthy men who gave instruction in Exchange Alley. About 50 of them operated rival establishments. To be one of the circle was to enjoy the combined glory of matinée idol, leading tenor, and military hero, with the cafés as a stage.

Death Under the Oaks

Over the generations, favorite dueling spots changed from one outlying point to another. Eventually the best patronized became a section of Allard Plantation, where stood a row of aged moss-draped trees, the "Dueling Oaks." Under these gnarled branches curious onlookers, drawn by grapevine word, assembled to watch as the duelists' seconds took their positions.

Orleanians recall Emile La Sère, who counted 18 duels but never maintained his anger for long. If his adversary survived, La Sère turned sympathetic. He would help bandage him up, take him home, and sit for nights at the bedside.

The natives tell also of Pakenham LeBlanc, who swore he had been treated discourteously

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Horns, Drums, Piano, and Shuffling Feet Sing Music's Ode to the Night

Basin Street, the birthplace of many a Negro jazz band, is now the site of a large housing project; but dozens of floor shows nightly enliven the vicinity of Rampart and Claiborne Streets. Here "Princess du Paur" and her partner do a Haitian specialty at the Dew Drop Inn on La Salle Street.

at a public dance. Since there was a large board of managers, he could not be sure whom to blame. So he put all the names into a hat. LeBlanc was a great duelist; the luckless one he chose, a tyro. But the "victim" shot first, and LeBlanc sank dead.

The most lustrous of New Orleans duelists, however, was José (Pepe) Llulla, who is said to have killed so many that he lost count. A gentle soul, he never dueled except when strongly affronted, or—well, perhaps to oblige a friend. Pepe had many friends.

The points at which many duels had their sequels, the cemeteries, are places that some consider the strangest of New Orleans's strange sights. "Cities within the city"—such is the phrase often used of them, and it is not inappropriate. In this region of a high water table, burial has generally not been underground but above it, in tombs or groups of tombs that suggest narrow residences, with peaked or rounded roofs, ranged along lines of streets.

Like the New Orleans houses, these tombs are very often of brick, stuccoed or whitewashed; they have miniature "galleries" of ironwork, iron gates, and metal garden chairs and benches. Here older families frequently visit together, and the atmosphere is sometimes far from lugubrious. They are here to pay their respects, and, as one man asks, aren't there more ways of showing respect than to beat your head against the wall?

Mark Twain thought New Orleans's tombs the city's "only real architecture." Not too tactfully he suggested that the people would be better off if they "lived as neatly while they were alive as they do after they are dead."

One Virtue Too Many

Here, as in other things, the Orleanians use their imaginations. The result is a profusion of sculpture—carved seraphs, soldiers, sphinxes. One lady wanted the Angel of Death "looking pleasant."

At the best-known American cemetery, Metairie, can be found an expanse of lagoons,

bridges over canals, and magnificent vaults, not least the much-talked-of shaft ordered for Mrs. Moriarity, with the four ponderous female figures which surround it.

The sculptor stared, according to the story, when the widower Moriarity demanded these "four virtues." "But there are only three virtues," he protested.

"I don't care. I want four."

He got his four, and to this day New Orleans calls them Faith, Hope, Charity, and Mrs. Moriarity.

Oddly related to the cemeteries is the subject for which New Orleans is as celebrated as any other: jazz. Many of the musicians who began to experiment with it and later to popularize it used to play for Negro funerals. On the way to the burial they would offer conventional numbers, such as "When the Saints Go Marching In." But, coming home, they would switch to livelier rhythms and brisker tempos.

Strange Noises from Basin Street

Long before the close of the last century "le jazz hot," though it was hardly called that, stirred in and around the river city. These were not the sounds that arose in the elite white courtyards of Royal Street or in Garden District drawing rooms; they had little clear suggestion of French and Italian arias heard at the opera houses, or of work tunes of the sugar fields, or even of African voodoo rhythms that the Negroes beat out in Congo Square. Yet they took something from each source, and into the night went the wail and pound of the new music.

After the war with the North the Negroes found that freedom meant also the right to express the songs that were in them. Reaching out happily to any instrument at hand, they played as the spirit moved them. Few could read music, but what did that matter? They made it come out their own way. Told he ought to learn to follow notes, one New Orleans jazzman asked, "But what would we do when the lights went out?"

The origins of a few early songs can be traced. "Tiger Rag" probably grew out of a French quadrille. An operatic number provided another inspiration; a chant of rice handlers yet another. The jazzmen played anywhere a job opened: the restricted district, with its scores of dives outside the French Quarter, or at private parties, cabarets, and lake-front picnics at outlying Milneburg —which gave rise, incidentally, to the classic "Milneburg Joys."

Buddy Bolden, Jelly Roll Morton, Bunk Johnson, King Oliver . . . The lists of jazz musicians are long, but high on any of them stands Louis (Satchmo) Armstrong, composer, singer, trumpeter extraordinary. Many think New Orleans would have served America's popular culture well had it done nothing except to provide jazz—and Satchmo.

Next to New Orleans's music the Nation might justifiably rank its food. When a Creole enters heaven, they say, he asks St. Peter where he can find the jambalaya. If he gets none of this strongly accented combination of shrimp, oysters, tomatoes, rice, and other items, he sidles over and inquires about food customs in the other place.

The town has long been a source of gastronomic joy, a place that frowns at the counting of vitamins and scorns a diet. This is no spot for a New Englander who favors a boiled dinner. The citizens are repelled by the pale art of the white sauce, or by the salad compounded of raw carrots and prunes stuffed with marshmallow whip. New Orleans prefers the pungent touch, the delicate "lift" of aromatic herbs. And it has always been as quick to "Bravo!" a good cook as a good tenor.

The cooking is not simply southern, nor that of rural French Louisiana, nor entirely Gallic or Spanish, Negro or Indian. Yet it has elements of all of them, plus something best identified as "of the lowest Mississippi."

From the French the cuisine derived a basic flavoring, a delicacy of taste. To this the Spanish added fragrant spices and concocted piquant combinations; the Indians contributed roots and herbs; the Negro, skills in mixing mouthwarming ingredients. Seasoning is there, but only in degree, a soupçon rather than a handful.

Crabs Shed Shells for Epicures

From the marshes and swamps, the river and the Gulf come fish and game, shrimp, oysters, crabs, and, not least, crawfish (in Louisiana the word is never crayfish). They go into soups, stews, bisques, court bouillons, bouillabaisses, with rice, potatoes, or other vegetables, and then, equally important, the indispensable herbs and spices—bay leaf, thyme, parsley, peppers, cloves.

Crabs are eaten hard-shelled, cold or warm, after being boiled in spiced mixtures; or else in stews and soups and salads. Foremost to some, however, are the crabs in their soft-shell phase, caught after they have shed and before they can reacquire armor plating. Broiled or fried in a buttery sauce, these tender crabs are eaten down to the thin shell and crisp claws.

Years ago Louisiana fishermen began to scoop up such crabs in their final fat hour, when they prepared to shed the hard shell that had grown too constricting. Working carefully, the men pulled off the old coverings, and there lay the succulent delicacy. The

Kodachrome by National Geographic Photographer Justin Locke

Paint Brightens a Power Plant and Calls Attention to Danger Spots

When completed, Ninemile Point station near New Orleans will use 50 million cubic feet of gas a day and generate a maximum 175,000 kilowatts. An air-conditioned office little bigger than a living room controls the plant.

Passengers Bound for South America Get a Musical Bon Voyage from Papa Celestin's Boys

Next to its food and frolics, New Orleans is best known for its early advocacy of jazz. Negro musicians hired to play at funerals sometimes eased the strain of solemnity on the route home by improvising. They borrowed bits from French quadrilles, Italian operas, field-hand chants, and voodoo incantations, and wove them into a distinctive music of their own. Noted jazzmen who sprang from this "conservatory" include Buddy Bolden, Jelly Roll Morton, Bunk Johnson, King Oliver, and Satchmo Armstrong. Below: Papa Celestin (crowned with snowy fez) formed his band in 1916. Its full-dress title: Original Tuxedo Dixieland Jazz Band.

Speedboats Serve as Taxis for Crews of Louisiana Wells

Within 100 miles of New Orleans, oil drillers tap more than 3,000 wells in 93 different fields. Derricks in the Gulf of Mexico stand 1 to 27 miles from shore.

To convert some of Louisiana's annual oil output of 230 million barrels into high-octane fuel, two firms are erecting catalytic cracking units. Other oil companies in Louisiana and Arkansas are currently adding $100,000,000 in plant and equipment.

Despite recent advances in geophysics, oil drilling is still a chancy business. This well on Lac des Allemands was sunk to 12,500 feet; it was abandoned after the picture was taken.

Kodachromes by National Geographic Photographer Justin Locke

New Industries, New Techniques Spell a New South

Few men have done more to dispel the notion of the "sleepy" South than the New Orleans boatbuilder, the late Andrew J. Higgins. During World War II his yards, mushrooming overnight, turned out more than 25,000 warcraft, from LCM's to PT boats. Once he delivered to the Navy eight radically new tank lighters in eight days—from the drawing board to the port of embarkation.

Here Higgins workmen sandblast rust and mill scale from steel plates for repair of the *General Newton* (background). One of the last stern-wheelers to ply the Mississippi, *Newton* serves the U. S. Corps of Engineers as an inspection boat. Its draught is only 5½ feet.

← Tulane University zoology students tattoo alligators as part of a survey to check the range of Gulf coast amphibians and reptiles.

→ Girls of Newcomb College, Tulane's distaff side, learn from instructor Howard Jones how to design and dye cloth by the silk-screen process.

Kodachromes by National Geographic Photographer Justin Locke

3½ Tons of Sulphur Swing into Storage from an Open Barge

Alchemists once thought sulphur could change base metals into gold. Now, under the urging of true chemists, it performs feats of magic more spectacular and useful.

With sulphur's help, wood pulp is converted into rayon, phosphate rock into fertilizer, soft rubber into hard. The yellow element plays an essential role in the production of drugs, dyes, steel, detergents, lubricants, and explosives.

Found in the cap rocks topping underground salt domes, sulphur is mined by forcing water heated under pressure to 330° F. into the formation. Melted, the mineral is piped to the surface. There it is solidified in enormous vats. Explosives later crush it for loading.

Tugboats like *Dixie* tow bargeloads to Port Sulphur from the Freeport Sulphur Company's Grande Ecaille mine, second in size only to the Boling Dome mine in Texas. A conveyor belt then shunts it 300 yards to freight cars or Mississippi River boats.

Derricks Do the Work of Stevedores Who Used to "Tote Dat Barge, Lif' Dat Bale" on Ol' Man River

One hundred and ten miles from the Gulf, the Mississippi coils sinuously around the Crescent City. Riverside wharves bulge with coffee, cotton, bananas, salt, and sulphur. This road-building machine goes aboard *Alcoa Cavalier* for La Guaira, Venezuela.

Kodachromes by National Geographic Photographer Justin Locke

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Kodachromes by National Geographic Photographer Justin Locke

Thousand-pound Pigs of Aluminum May Soon Become Airplanes

Powered by natural gas, Kaiser Aluminum's Chalmette plant will produce 40 percent as much electricity as Hoover Dam. It will use more water than New Orleans and make 400,000,000 pounds of aluminum a year, much of it for national armament.

United Fruit Company Unloads Green Bananas from Honduras

Stems like these average 90 pounds. One company alone imported 7,000,000 stems in 1951. Kept at about 54° F., the bananas ripen but little in transit. Later they mellow almost a week at 62° to 68° in air-conditioned warehouses.

Orleanian who does not consider you an epicure will not waste this delight on you.

In the best New Orleans cuisine there is continuing adjustment and adaptation. Though my family is of Irish descent, the present generation grew up on gumbo and other French-Spanish dishes. We like jambalaya as thoroughly as any Creole; yet we also enjoy Italian stuffed artichokes, as well as an emphatic crab mixture suggested by a Dalmatian friend in the lower delta. Since one family branch is German, we have long appreciated pot roast and noodles. Yet in the main, whatever goes onto the stove emerges with a strong Creole seasoning.

Any listing of restaurants is a catalogue of personal preferences. Antoine's, superlative for generations, is notable in one man's opinion for oysters: Rockefeller, of course (page 158), but also for oysters Ellis, a casserole combination with black mushrooms, and a pronounced brown sauce with a fish base. Galatoire's, a place that hundreds of natives consider their favorite, is celebrated for a *filet de truite Marguery*, a trout smothered (happy death!) in a comparatively bland covering with shrimp, mushrooms, and hollandaise sauce.

Brennan's, increasingly popular of late, offers an imaginative "appetizer" of mixed baked oyster specialties—Rockefeller, Roffignac, and Bienville, with snails or shrimp in the center. Arnaud's is memorable for such dishes as breast of turkey *en papillote*, a rich yellow concoction imprisoned with steam and aroma inside a paper bag.

But the roster can quickly grow as long as a Broussard menu. Commander's Palace, La Louisiane, Corinne Dunbar's, Josef's, Tujagues, Manale's, Kolb's, Sclafani's, Jimmy Moran's—I think no gourmet, no matter how rare his palate, will starve in New Orleans.

The Unbelievable Mardi Gras

It is the Mardi Gras, however, which means New Orleans to millions. It's the fastest, giddiest, most absurd, most magnificent thing in the city. It may be regarded as a state of mind, something that pervades the air and gets into the Orleanians' bloodstreams. The stranger protests: "I don't believe it, but there it is!" (Pages 159 to 163.)

It comes from France, a celebration that goes back to the pagan rites of spring, which the Christian Church took over. Sometime in Louisiana's French period, natives remembered, first, the custom of balls, and then the street marching and masking. Creole youths returning from Paris decided to liven things up and led files of costumed masqueraders past women who threw roses from the balconies.

Observance of Fat Tuesday—Mardi Gras—varied with the years. From time to time, during political unrest, officials frowned on the dangerous custom of masking, and now and then the street doings got out of hand. But gradually the celebration became an accepted institution, until today it seems forever embedded in the New Orleans way of life. Stop Mardi Gras? Most Orleanians would think it worse than abolishing Santa Claus.

The Carnival season is two things in one—a system of private entertainments arranged by "krewes," or organizations of men, with kings, queens, courts, and tableaux; and then a public occasion, in which anybody can join and practically everybody does, with his cousins from the bayou and his friends from St. Louis, Richmond, and New York.

Season Runs from Christmas to Lent

Christmas is hardly over when the season starts, to continue for two months, more or less, depending on the date when Lent brings Carnival time to a close. Night after night various krewes have their shining balls and processions behind closed doors. The momentum gathers, and sometimes the Municipal Auditorium finds two organizations in celebration, one on each of its sides, with thousands assembled to dance or watch.

To be a queen . . . For some debutantes, and their mothers, fathers, cousins, friends, and enemies, it is a matter of a lifetime's yearning, prayers, and despairs. The number of Carnival krewes has increased fantastically in recent years, yet the supply of queenships is never enough.

Some families stave off creditors for years while working and saving for what may be their daughter's supreme hour. Papa may go broke a week later, but for the rest of her life the girl will have her shimmering gown to display, her crown and scepter, and the memories that she will pass on to her children and grandchildren.

In the older organizations the choice of queen is determined by family tradition, social standing, wealth, business affiliations, personal obligations. Mardi Gras has its own royal inheritance. Often when a candidate's mother has been queen, it is understood that the daughter too will eventually rule the krewe for a night. Gowns will cost thousands, and there may be long instruction so that Miss Queen will walk with a truly regal air.

Each krewe also has its king, and though among the men there is less heated rivalry and less burning anticipation, nevertheless it may mean a great deal in general repute to be known as Carnival royalty. Rex is the monarch of monarchs, officially king of Carnival kings, and the city is his for the day.

As Fat Tuesday itself approaches—it falls on February 17 this year—the tempo of the

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Illustrious Ladies of a Bygone Era Look Down on Hostesses of the Spring Fiesta

These portraits hang in the Louisiana State Museum, occupant of the 158-year-old Cabildo, one of the city's principal monuments to Spanish days. Here in the Casa Capitular (Chapter House), the Very Illustrious Cabildo, or city council, held its sessions and left its name as a heritage to the building (page 152).

balls increases, and the larger krewes hold not only their private ceremonies but also great street processions, parades of glittering floats depicting scenes from legend and mythology. For a week or so before Mardi Gras and on successive afternoons, thousands line the streets to stare at the shining pageants, to shout to figures on the floats, and to catch trinkets tossed by the masked ones. Flares flicker, bands play, children shriek; there is splendor over New Orleans.

At last, on Tuesday—Mardi Gras itself—the city gets up early, forgets work, walks around, marches in clubs, rides trucks, masks as anything from Dorothy Dix to Frankenstein's monster, and peers at the successive parades that pass for hour after hour. It is a friendly day, a good-humored day, one of surprisingly few fights or displays of temper. For Mardi Gras New Orleans checks everything except its will to enjoy itself.

Babies dressed as rabbits wave hands to the passers-by. A young man decks himself in a great-uncle's Confederate uniform; bright-faced prototypes of Irene Castle waltz in the street; one man pushes another in a wheelbarrow; women with gorillas' faces and gorillas with women's faces prance and weave; a dowager shows up as a bootblack; boys pass dressed in papier-mâché bottles; a girl minces by in the guise of an alligator; and hundreds more bob in and out of the procession representing only they know what.

Gray Dawn Ends the Party

Old Mardi Gras hands don masks and wander through the day, stopping to see the Negro community's Carnival show—Zulu, King from Africa, with grass skirt to prove it. They hail the Jefferson City Buzzards on that club's "walking parade"; call to friends who, even if they happen to be somebody else, will call back; sip and eat at intervals, sitting down to gain strength and then going right on.

With dark the masks come off, but the costumes can remain unchanged, and the dancing and fraternizing, singing and talking continue as long as individual constitutions hold up.

At midnight Lent begins, the 40 days of sackcloth and ashes; and New Orleans remembers the meaning of the words: *Carne vale*, farewell to the flesh. That day it begins to rest up for next Mardi Gras.

Malaya Meets Its Emergency

Embattled British and Malays Fight Red Terrorist Guerrillas, but Keep Vital Rubber and Tin Moving to the Free World

By George W. Long

With Illustrations by National Geographic Photographer J. Baylor Roberts

"READ this," said the director of a large British rubber company in Malaya. "It's a letter from one of our plantation managers. Gives you some idea of what we're up against out here. Reports like this are routine these days."

Taking the paper, I read of a hit-and-run raid by Red terrorists—of rubber trees by the hundreds slashed, equipment smashed, trucks burned, and workers intimidated. Tersely the final paragraph announced:

"We deeply regret to advise that Mr. W. A. Puddicombe, our assistant, was murdered by Communists this morning."

Grim Half-war Grips Malaya

Such incidents, multiplied by thousands, make up the grim half-war that has gripped Malaya since mid-1948. With typical understatement the British there call it simply the "Emergency."

In the dense jungle that blankets four-fifths of this lush, productive country lurk some 5,000 tattered and tough Communist guerrillas. They aim to wreck the country's economy, create chaos, and take control.

Swift, elusive, quickly swallowed by the jungle, the terrorists are everywhere and nowhere. Surprise, sudden death, and gangster terrorism are their weapons. Striking against Asians and British alike, they ambush traffic, derail trains, attack villages, murder, burn, and rob.

The Reds' prime targets, the war's "front lines," are Malaya's rich rubber estates and fabulous tin mines. Planters and engineers, wearing side arms and getting about in armored automobiles, live and work in death's shadow. Somehow, despite the Emergency, they manage to produce a third of the world's natural rubber and more than 35 percent of its tin (pages 187, 227).

In the steady flow of these vital resources lies Malaya's vast importance to the free world.

About the size of New York State, Malaya shares Southeast Asia's long Malay Peninsula with Thailand. It is a country of dramatic mountains clothed in jungle green, of palm-fringed beaches, idyllic thatch-roofed villages, bustling towns, wild rivers, monsoon rains, tropic heat, and enervating humidity. At the southern tip of the peninsula, like a pendant, dangles the modern island city of Singapore (map, page 189).

On a visit to Asian trouble spots, National Geographic photographer Joseph Baylor Roberts and I flew to Singapore after a tour of embattled Indochina.* As our plane circled the city, we saw scores of freighters dotting its spacious anchorage. This strategic Crown Colony is still the busy "crossroads of the East."

But in Singapore the Emergency seemed remote, although it filled the city's newspapers. Chief topics of conversation were business and money. Tight knots of serious men discussed the price of rubber, so important to Malaya. War in Korea had inflated rubber to five times its early 1950 value. When we arrived, the balloon had just burst and the price was sinking fast; later it steadied.

For a close-up look at the Emergency, we journeyed into the strife-torn Federation of Malaya and then returned to Singapore. With us went British-born James Taylor, a veteran planter. Early in the twenties "Jungle Jim" began working on Malayan rubber estates. He became an American citizen in 1938 and hunted wild rubber in the Amazon's upper reaches during World War II. When the Japanese invaders left Malaya, he returned. Jim can't stay away from rubber long.

Although friends looked doubtful and shook their heads because of the "danger," we drove from Singapore to Kuala Lumpur, the Federation's capital, without incident. We found "K. L.," as it is called, a bustling city of 200,000—British colonial city, Malay village, and Chinese town rolled into one (p. 188).

Jungle "Comforter" Shoots Lead Slugs

To see a rubber plantation under the Emergency, we drove from K. L. through rolling country to the 1,700-acre Tuan Mee estate. Rubber trees in orderly rows marched beside the curving road for miles. Jungle, wild and forbidding, lined our route in places. Quietly Jim laid his "comforter," a .45 automatic, on the seat beside him.

* See, in the National Geographic Magazine: "Indochina Faces the Dragon," by George W. Long, September, 1952; "Portrait of Indochina," by W. Robert Moore and Maynard Owen Williams, April, 1951; and "Strife-torn Indochina," by W. Robert Moore, October, 1950.

Barbed Wire, Steel-plated Car, and Armed Guards Protect a British Planter

Malaya's Red raiders strike at rubber estates, road and rail traffic, tin mines, and isolated villages. Security forces slowly gain the upper hand, but lonely planters like Harold Aitken-Quack (above) still live and work in constant danger. British understatement terms this grim hide-and-seek war the "Emergency."

At Tuan Mee's barbed-wire enclosure a special constable presented arms. Jim spoke in Malay, and we proceeded past neat lawns and exotic shrubs to a spacious bungalow. Out bounded a colt-size great Dane, followed by its master.

"I'm Harold Aitken-Quack," said the planter. "Been waiting for you. Expected you sooner and was getting worried. Can't be sure one's guests will arrive these days."

"Glad to see you chaps," he said as we chatted later. "It's a bit lonely here. My wife and son are in England, but in a few months I'll join them on leave. After that we'll return here."

Police Escort on Every Trip

After lunch, Harold described a planter's life during the Emergency.

"It's quite different now," he said. "I used to spend most of my time outdoors, overseeing the planting or clearing of land. Now, because of the terrorists, I can't go anywhere without a constable escort. Can't remain anywhere more than 15 or 20 minutes, nor do anything today at the same time as yesterday. Too easy to plan an ambush."

"Have you had much trouble?" Joe asked.

"Not much, really. Been lucky. I've had quite a few trees slashed, but my biggest headache is lorries—trucks, you'd call them. Lost four last year. It hampers the collection of latex.

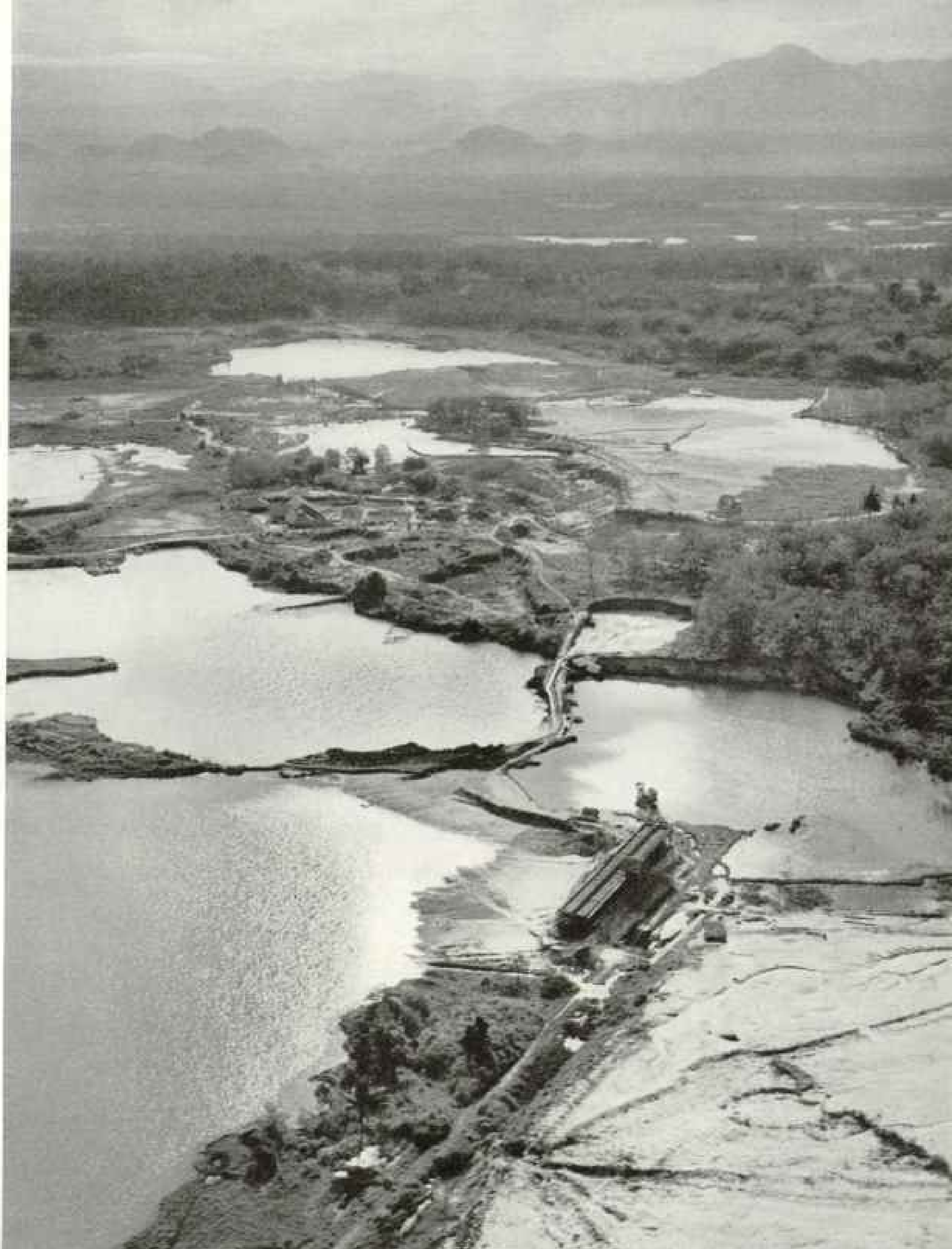
"I know the bad hats around here—a gang of Indians led by a Chinese. Appear at odd times in the fields, demand food and money from our tappers. They don't get much—it's a serious offense for workers to carry either; so they burn my lorries.

"Usually one can't tell a Communist from anyone else, which makes the whole business rather awkward. A few years ago I had a houseboy, seemed a decent sort, who turned out to be one. Gave information that led to a nasty ambush."

"Speaking of ambushes," Jim asked, "how has your luck been on that score?"

"Not bad," Harold answered. "There were eight on this road last year, and several buses burned. I've had only two narrow escapes—got caught in a skirmish between terrorists and security forces once. Most embarrassing.

"But I get around," he continued. "I've neighbors four miles away in either direction.



187

Rain Water Fills Abandoned Mines and Dots the Tin-rich Kinta Valley with Lakes

Communist raids have reduced Malaya's tin output, but the country still turns out more than 35 percent of the world's total. This table-flat valley in mountainous Perak yields half of the Federation's production.

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Mosquelike Government Buildings Reflect Islam's Influence in Malaya

Union Jack and Selangor State flags fly from balconies in Jalan Raja Street, Kuala Lumpur (opposite page). Sir Frank Swettenham, who held many high posts in British Malaya, stands in bronze at left. His statue, removed during the Japanese occupation, was re-erected in 1946, when he died at 96 years.

There's a curfew here at night for pedestrians and cyclists, but not autos. Evenings are long and lonely, so occasionally I get my guns, roll up the steel windows of my armored car, and go visiting. Can't let the terrorists interfere with my social life."

A Missing Gong Means Danger

Darkness, enveloping Tuan Mee, underscored its utter loneliness. The jungle, black and wall-like, seemed to move closer. Floodlights, switching on around the clearing, held it at bay. Stars twinkled above; gongs sounded by guards broke the deep silence into half-hour intervals.

"They sound all night," Harold said. "If they missed a turn, I'd wake right up."

We retreated to the bungalow's cheery upstairs living room. For comfort Jim and Harold donned sarongs.

"Like music?" our host inquired. "It's my chief pleasure. Don't know what I'd do without my gramophone."

Far into the tropical night we listened and talked—listened to music that ranged from Bach and Beethoven to the latest numbers on America's Hit Parade.

Harold tossed me a post card.

"From my young son," he said. "Arrived today."

A cartoon showed comic characters in a badly battered automobile. "Having a smashing time," it said. Beneath the printing a childish hand had added, "Your car shot up."

Shortly after dawn we rose and visited the "lines"—living quarters of the rubber tappers. A crowd of men, women, and children, mostly Tamil Indians, waited with pails inside the settlement's barbed wire. At 6:30 they rushed out, scattering in all directions.

"We used to start tapping the trees at 5 o'clock," Harold told us. "Latex flows better then. Now it isn't safe; terrorists are often about before dawn."

Inspecting the estate, we followed milky latex, lifeblood of Malaya, from tree to factory. We watched coagulated slabs rolled into rubbery sheets, which were then hung like laundry on trolleys and wheeled into the smokehouse (page 206).

"Emergency or no emergency," said Harold, "we roll a ton a day through here. The work's all done by noon."

On the way back to Kuala Lumpur we stopped with Harold at a neighboring oil-palm plantation and enjoyed the open-handed Scottish hospitality of Mr. and Mrs. Pat Stewart (page 192).

Capital Reflects the Emergency

Downtown K. L. surprises visitors with its modernistic office buildings, big department stores, movie palaces, and heavy, swirling traffic. Mosquelike Government buildings, built on Moorish lines, impart a Near East look. Fine homes and official residences crown hills in the city's suburbs. Stands of rubber and the yawning pits of tin mines hem in the fast-growing city.

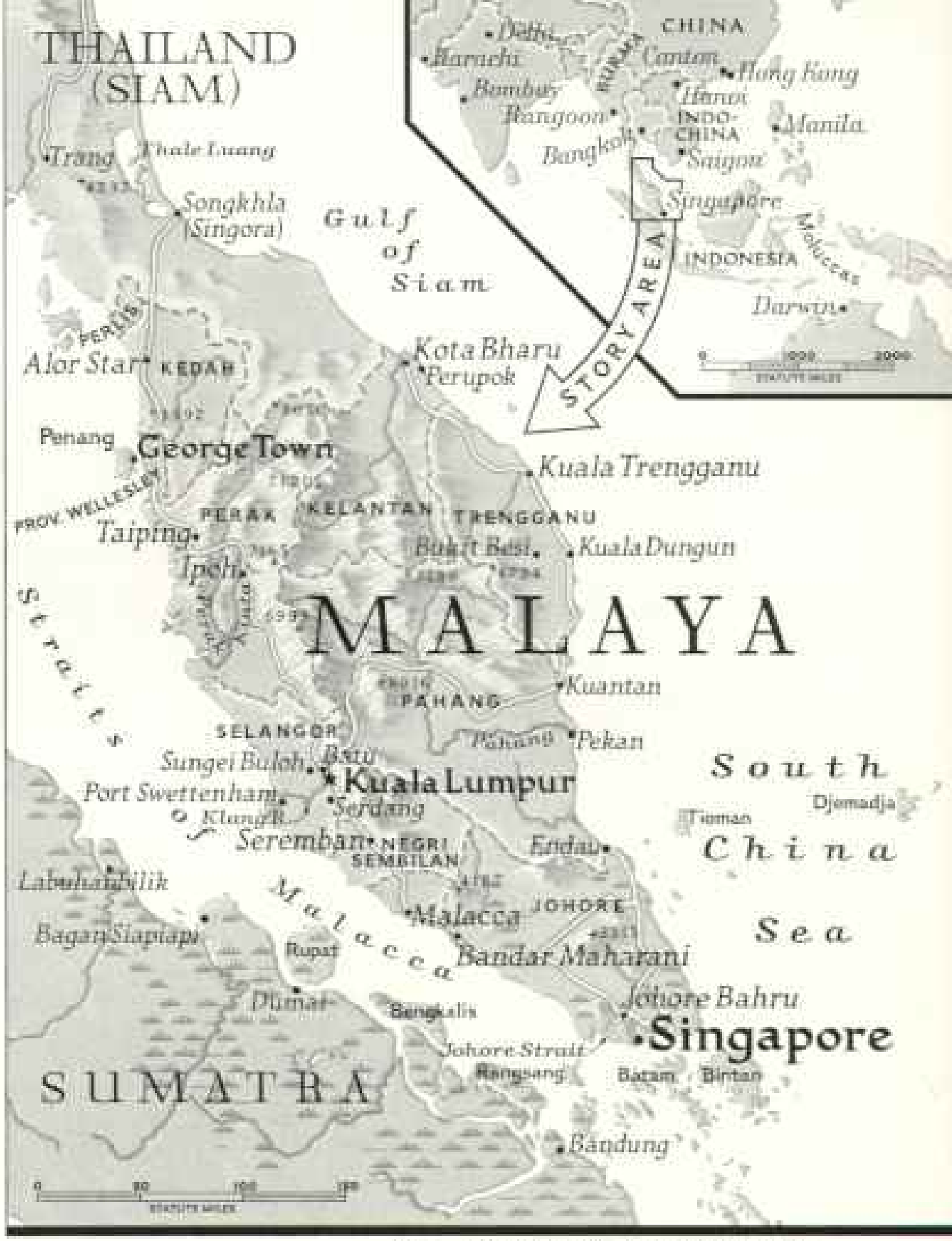
The capital reflects Malaya's Emergency. Armored military vehicles rumble through the streets; motorcycle couriers roar past on official business. High overhead jet fighters streak the sky. Planters with side arms park steel-plated Fords on Batu Road and meet old friends for food and drink at the Coliseum. Talk centers on the latest "incident" or the price of rubber.

In lofty King's House I discussed the Emergency with Britain's High Commissioner and military commander in Malaya, General Sir Gerald Templer.

"Make no mistake," he said. "We're not suppressing a nationalist revolt in Malaya. This country is a vital front in the war to hold Southeast Asia against communism. Britain hopes to lead Malaya along the road to responsible self-government, and in spite of the Emergency we've made a good beginning. Recently some three-quarters of Malaya's people were granted federal citizenship.

"Toughest nut to crack is the racial problem," he continued. "There are almost as many Chinese as Malays in the country, and a sizable group of Indians and Pakistanis. About 95 percent of the terrorists are Chinese. Behind the blighters is a big Communist underground called the Min Yuen, which keeps them supplied with food and money. They're the real enemy, for without them the terrorists couldn't exist.

"Who are they? That's what we'd like to know. Information is our big problem. Many Chinese bravely resist the Communists, which is why the terrorists kill more of their own



189 Drawn by Russel Pritz and Victor J. Keller

Malaya and Singapore, Rich Prizes, Tempt Red Plotters

About the area of New York State, the British-protected Federation has 5,300,000 people, of whom nearly 40 percent are Chinese. Rubber and tin give the country an importance far beyond its size. At its tip lies the island of Singapore, a Crown Colony with its own government.

race than any other. But terrorism keeps mouths shut.

"Most successful action by our security forces comes as a result of tips. Information we must have. I'm trying to do something about it. Come around tomorrow and see."

I did, and watched rain-soaked British and Gurkha troops haul locked ammunition cases and wooden boxes into King's House.

"What's up?" I asked a reporter.

"Operation Question," he answered. "Day before yesterday soldiers delivered letters to the heads of families in five picked villages in the Federation, letters asking for information about the Min Yuen. Later they were collected, sealed and unsigned, and brought here."

Headmen of the villages, in native dress, lugged the cases to a table. While flash bulbs popped, Sir Gerald and his staff opened them and stuffed the letters into pouches (p. 210).

Later I talked with affable Col. Arthur Edwin Young, Malaya's No. 1 policeman, trained by Scotland Yard.

"Large-scale military action in Malaya is useless and almost impossible," he told me. "Doubt if an army of ten million could end the Emergency. The terrorists would merely fade away temporarily—hide deeper in the jungle or bury their arms and join the civilian population. We use Army units in addition to the RAF and Navy, and the Australian Air Force is lending a hand. Primarily, however, the situation calls for police action.

"Our basic problem here is to provide security, the job of any police force. And that we have not got in Malaya—yet. Most of the people, including the Chinese, are on our side, but terror keeps many from cooperating. There's a long, hard struggle ahead, but we've reason to be encouraged.

"We have a force of 75,000, more police than the United Kingdom has with ten times Malaya's population. But don't think of them all in terms of British bobbies or your American policemen. Five thousand are specially trained to track down and kill terrorists deep in their jungle hide-outs. Like to see some of them train and operate?"

Self-discipline Makes Jungle Police

In Sungei Buloh, near K. L., we watched jungle police recruits drill (page 193). A leather-lunged drill sergeant kept marchers hustling; perspiration streamed down faces and drenched khaki shirts. Whenever trainees made a slip, they berated themselves aloud. Some beat their shoulders with rifle stocks, while others broke ranks and jogged several laps around the field.

"Malay recruits take drill seriously," our officer guide said, "and no nonsense."

In Serdang we visited an operating jungle police company, old hands at this grim hide-and-seek warfare. Wall charts in headquarters, complete with names, outlined the organization of the local Communist Party and the Min Yuen. A group photograph showed an enemy unit posed like a college varsity.

"We found that on a dead terrorist," said the commanding officer, D. C. G. Mole. "Front row center is our No. 1 enemy, a clever Chinese we call 'the bearded wonder.'

Terrorist Bands Now Shrinking

"Surrendered terrorists keep the charts up to date. A few years ago we met bands of terrorists around here as large as 300. Something to shoot at then. Now their strength is down in this State, and they've had to break up into squads as small as 10. Our job is to keep after them and prevent them from gathering for a large operation.

"We've noticed signs that their morale is slipping. Some of those chaps, counting the time they fought against the Japanese, have lived hunted lives in the jungle for 8 out of the last 11 years. Now, with their men operating in small groups, top Communist commanders can't maintain discipline. So voluntary surrenders are on the increase.

"Just the other day a pair of terrorists gave themselves up. When they found that they weren't badly treated, they offered to return to the jungle and persuade their comrades to come in. We took the chance, and they brought in 10 more."

A sergeant spoke to Mole.

"Righto," the officer said. Then to us, "A bit of a show down the road. Let's go."

Driving, we followed a winding dirt road through hilly jungle. Abandoning the car, we started hiking. Suddenly our guide halted and said, "Better take shelter. Here."

Mole and I crouched in a ditch behind a No Trespassing sign; Joe and Jim took positions near by. Gnarled, abandoned rubber trees and a covering of underbrush climbed a hill on our side of the road; thick jungle screened the other. I noticed the butt of Jim's "comforter" protruding from his hip pocket. In silence we waited.

"Look," my companion whispered.

I looked, and saw a squad of men in jungle green, carbines ready, creeping single file through the underbrush. A burst of rifle fire rattled from the hilltop; as one man, the squad hit the ground and froze.

It didn't stay frozen. A Bren gun chattered, phosphorus grenades arched over treetops, and crouching figures, darting from tree to tree, charged up the hill firing. Suddenly all was quiet again.

"Less than two minutes' elapsed time," Mole

Kodachrome by National Geographic Photographer J. Baylor Roberts

Malay Police Track Red Terrorists on Jungle Trails Where Sudden Death Lurks

Hitting, running, and vanishing, some 5,000 Communists tie up 140,000 soldiers and police. British, Malay, and Gurkha units are slowly gaining the upper hand. These men operate near Kuala Lumpur (page 193).

Nearly a Ton of Armor Protects a Rubber Planter's Car. Windows Are Metal; Steel Visors Drop Across the Windshield

Sociable Harold Aitken-Quack (left) risks Communist ambush to call on Mr. and Mrs. Pat Stewart, his neighbors, near Malaya's capital (page 206).

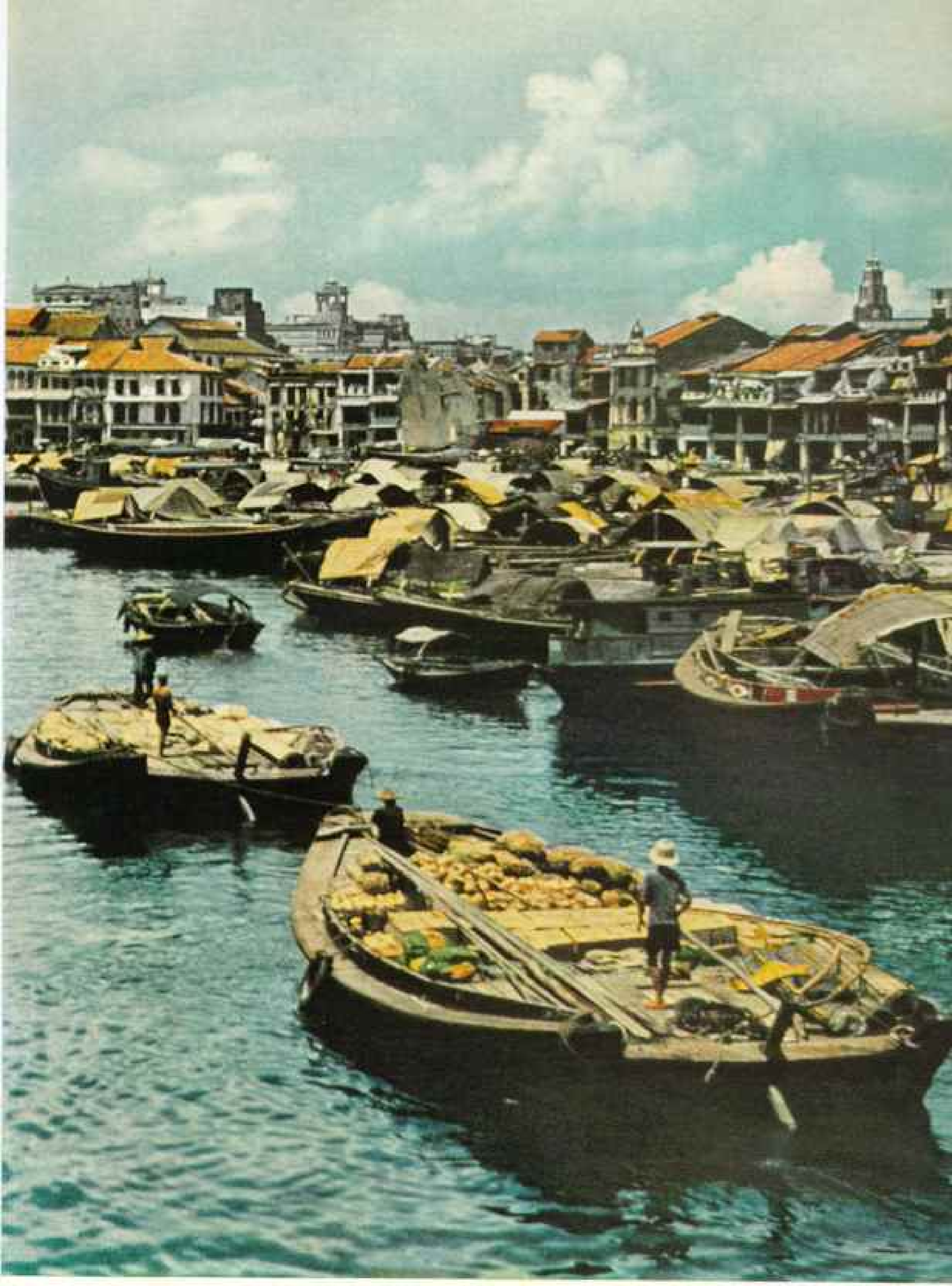
Malay Police Recruits Get the Feel of a Military Rifle and Learn How to Line Up a Terrorist in Its Sights

All volunteers, these cadets undergo basic training near Kuala Lumpur. Soon they will face rain, leeches, jungle rot, and fighting not unlike the Indian campaigns in frontier America. Never knowing where or when the Reds may strike, they will safeguard the free world's tin and natural rubber.

Kodachromes by National Geographic Photographer J. Baylor Roberts

Narrow, Boat-lined Singapore River Channels the City's Vast Maritime Trade

Singapore, a free port, is Southeast Asia's warehouse. Riverside godowns bulge with goods held for transshipment. Out go raw products from plantations and mines; in come finished wares from Europe and America.



195 Reductions by George W. Long, National Geographic Staff

Cargo-carrying Lighters Shuttle Between Quays and Anchored Freighters

Bamboo-awninged barges cluster around both shores. They bear such cargoes as spices, Oriental woods, coconuts, rubber, and palm oil. A motorized sampan tows this boat train (page 202).

Balconied Flats Ease Singapore's Need for Housing

In 20 years the city's population has nearly doubled. To meet its housing shortage, the Crown Colony builds a wide variety of low-cost apartments (page 199). These two- and three-bedroom flats rent for the equivalent of $16 and $20 a month. Shops fill the shady arcade.

▾ Singapore Swimming Club Escapes the Heat

This seaside rendezvous offers relaxation, food and drink, and cool breezes to 4,200 members representing 25 nationalities. Diners while away tropic evenings and hot week ends sitting beside the pool and watching passing ships.

Swimmers used to splash behind a shark fence in the sea. The large pool, one of the first in Southeast Asia, was built in 1931 and promptly filled with filtered salt water.

Singapore's Japanese conquerers relaxed here during World War II, but never realized their plan to transform the pool into a submarine pen.

This Sunday-morning scene shows water-polo players kicking up spray.

Kodachromes by National Geographic Photographer J. Baylor Roberts

Laundry Flies Like Flags from Singapore's Chinese Windows

Singapore is almost as Chinese as Hong Kong; four residents out of five trace their beginnings to China. A typical bit of Chinatown is Sago Street. Jaywalking is the rule. Boys who used to pull rickshaws now pedal trishaws, or pedicabs. Shoppers buy produce from curbside vendors.

Block after Block, Singapore's Empty Spaces Are Fast Disappearing. Government Funds Build Western-style Apartments

Scarcity of machinery, materials, and skilled labor slows construction. Mere boys and girls here carry wet concrete on shoulder poles. Buildings in background went up in December, 1951. Rents of $12.60 a month seem as high to residents as they appear low to visitors.

Kodachrome by National Geographic Photographer J. Baylor Roberts

← Top Spinning Requires a Man's Muscle

Many a Malay celebration calls for a top-spinning match, a sport so arduous that only grownups play it. Contestants wind 10-pound tops with heavy ropes and hurl them side-arm with all the flourishes of a baseball pitcher.

Using split-bamboo scoops, helpers lift the whirling disks from the ground and transfer them to metal-capped poles. Tense onlookers lay bets on which top will spin longest. These villagers live in Kelantan.

↓A familiar sight in Malaya is the Chinese peddler, his wares piled all over a trishaw. Hundreds of household items tied, hooked, or balanced seem in imminent danger of falling off; yet they never do. Uncovering a buried article costs this Penang merchant no end of trouble. His chicken-feather dusters are used for cleaning cars.

Kodachromes by George W. Long and J. Baylor Roberts, National Geographic Staff

A Malay Housewife Prepares the Warp for a Silver Lamé Sarong

To ensure tension, fingers guide yarns from the spools to the warping frame. When the pattern is woven, bamboo needles insert gold or silver weft yarns. A weaver may spend 12 days making a 46-by-72-inch sarong.

Trading Companies' Flags Fly Beside the Harbor That Turned a Jungle into a Metropolis

When Sir Stamford Raffles acquired the Singapore concession 134 years ago, the island was almost uninhabited. Today it contains more than a million people; banks, stores, and office buildings stand shoulder to shoulder.

Kodachrome by George W. Long, National Geographic Staff

The Clock in Victoria Memorial Hall, Singapore's Civic Center, Chimes the Hours

Foot and traffic bridges span Singapore River (page 194). A stone jetty separates the harbor's inner and outer roads. Tile-roofed Government buildings flank Empress Place, heart of the Crown Colony.

A Weird Menagerie Lures Visitors to Tiger Balm Gardens

A Singapore showplace, the gardens were built in the 1930's by two Chinese businessmen, Aw Boon Haw and his brother, the late Aw Boon Par. Having made a fortune manufacturing and selling a panacea called Tiger Balm, they named the gardens for their bonanza. This section depicts "natural history." A recently added attraction is Donald Duck (not shown).

A Tamil Indian girl does not quite reach the height of a pagoda flower blossoming near Kuala Lumpur. *Clerodendron paniculatum*, the flower so aptly named for the Chinese pagoda, is found from south China to the Moluccas. Malays use its essence as an elixir.

An Indian snake charmer plays dance music for his cobra, while a mangrove snake slithers from his neck. Science does not credit snakes with ability to hear sound waves transmitted through the air; the cobra sways in harmony with the moving flute. Spectacle marks on the hood indicate the serpent came from India. The black untasseled fez identifies its wearer as a Moslem.

Kodachromes by National Geographic Photographer J. Baylor Roberts

▲ Malaya's Planters Grow More Rubber Despite Red Terror

Huge rubber estates are prime targets of Communist guerrillas. Some plantations endure a virtual state of siege. Hit-and-run raiders slash trees, burn trucks, intimidate workers, and ambush overseers. Planters carry arms and ride armored cars (page 192). Their bungalows and the workers' settlements are fenced and patrolled.

Defense costs much money and time; yet Malaya's rubber output tops the prewar level by 10 percent.

Some 3,360,000 Malayan acres produce a third of the world's natural rubber. More than two-fifths of the trees stand in small groves, many owned by Chinese or Malays.

Here Harold Aitken-Quack, director of a European-owned plantation, examines amber sheets of rubber fresh from the smokehouse. Like an old-time Western gunman, he seldom goes anywhere without his pistol.

◂ A worker attaches rubber soles to canvas shoes in a factory near Kuala Lumpur. This Chinese-owned plant turns out 2,500 pairs a day for export to Britain, east Africa, and the Near East.

Kodachromes by National Geographic Photographer J. Baylor Roberts

said as we straightened up. "Not bad. What you saw was Operation Ambush, a training exercise. Hidden terrorists often fire down slopes like this at our patrols. Grenades and the Bren gun are supposed to pin them down while our flankers circle and charge them from the side. It's old stuff, but effective."

On the way back our guide said: "Imagine what it's like hunting terrorists in the deep jungle. This is comparatively open around here. In some areas a man is invisible at 20 feet—you can't see an enemy until you step on him. Often a patrol's daily progress is measured in yards instead of miles. Heavy rain, leeches, jungle rot, and the feeling that an unseen terrorist has you in his sights make the whole business rather awkward. I suppose it's like Indian fighting in America long ago, only worse."

Outside K. L. and in other parts of the country I saw Malaya meeting its Emergency in another way. It had more to do with ballots than bullets, building instead of destruction, a new mode of life rather than sudden death. It's changing the face of the land and the daily lives of almost a tenth of Malaya's people. "Resettlement" is its undramatic name.

Before World War II, but especially during the Japanese occupation, thousands of local Chinese and others became "squatters"—moved away from towns, built homes, and carved out small farms on public land on the jungle's fringe. Isolated, they became the prey of terrorists, who exacted food, supplies, and information from them.

New Lives for Half a Million

Malaya began the Herculean task of moving and resettling 500,000 men, women, and children, their homes and belongings, in 1950. It's as if the population of Buffalo, scattered over New York State, were moved with houses and possessions and consolidated into 400-odd new villages.

When I was in Malaya the back of the resettlement job had been broken. In addition, thousands of nonsquatters had been regrouped for safety, their homes in outlying areas pulled into already existing villages. Rubber estate and tin mine workers were also regrouped, at their employers' expense. In all, 423,000 persons had been resettled or regrouped.

Miles of barbed-wire fences, protected by watchtowers and often lighted at night, encircle both new and old villages. Malaya reminded me of Indochina with its fortified towns, or our own early Wild West with its stockaded settlements. Completely free by day, jobholders and farmers go to work in the morning but must be inside fences at curfew time. The barbed wire is not so much to keep villagers in as to keep Red agents out.

Communists labeled the new villages "concentration camps," and at first many people were loath to move into them. Now many nonsquatters petition the Government to become new villagers. I found out why when I visited the Federation's largest resettlement village at Jinjang.

"Resettlement's a major revolution in the lives of new villagers," its English-educated Chinese director told me. "Squatters lived hard, primitive, lonely lives. Now village life gives them a new outlook and advantages they never knew existed. Let's look around."

Cruising the straight gravel streets of this widespread town, I passed hundreds of small, neatly spaced homes, no two alike. Some were crude, others more elaborate; many reflected individual pride of ownership.

Movies and Piped-in Music

Near the town's center I saw an imposing brick movie theater, primary school, Buddhist temple, Christian church, big open-air market, dispensary, two maternity hospitals, and a community center. Small shops and not a few beauty parlors occupied corner locations in many sections. Vacant lots awaited the building of police and fire stations. Lanterns hung on corner poles for night illumination, and curbside faucets gushed pure water from a reservoir.

Housewives promenaded with tots, carried pails of water on shoulder poles, or conversed with neighbors as their counterparts do everywhere. Men were largely absent—out tending truck gardens, doing jobs in near-by K. L., or working as tappers, tin miners, or lumberjacks. Youngsters played in streets or small playgrounds.

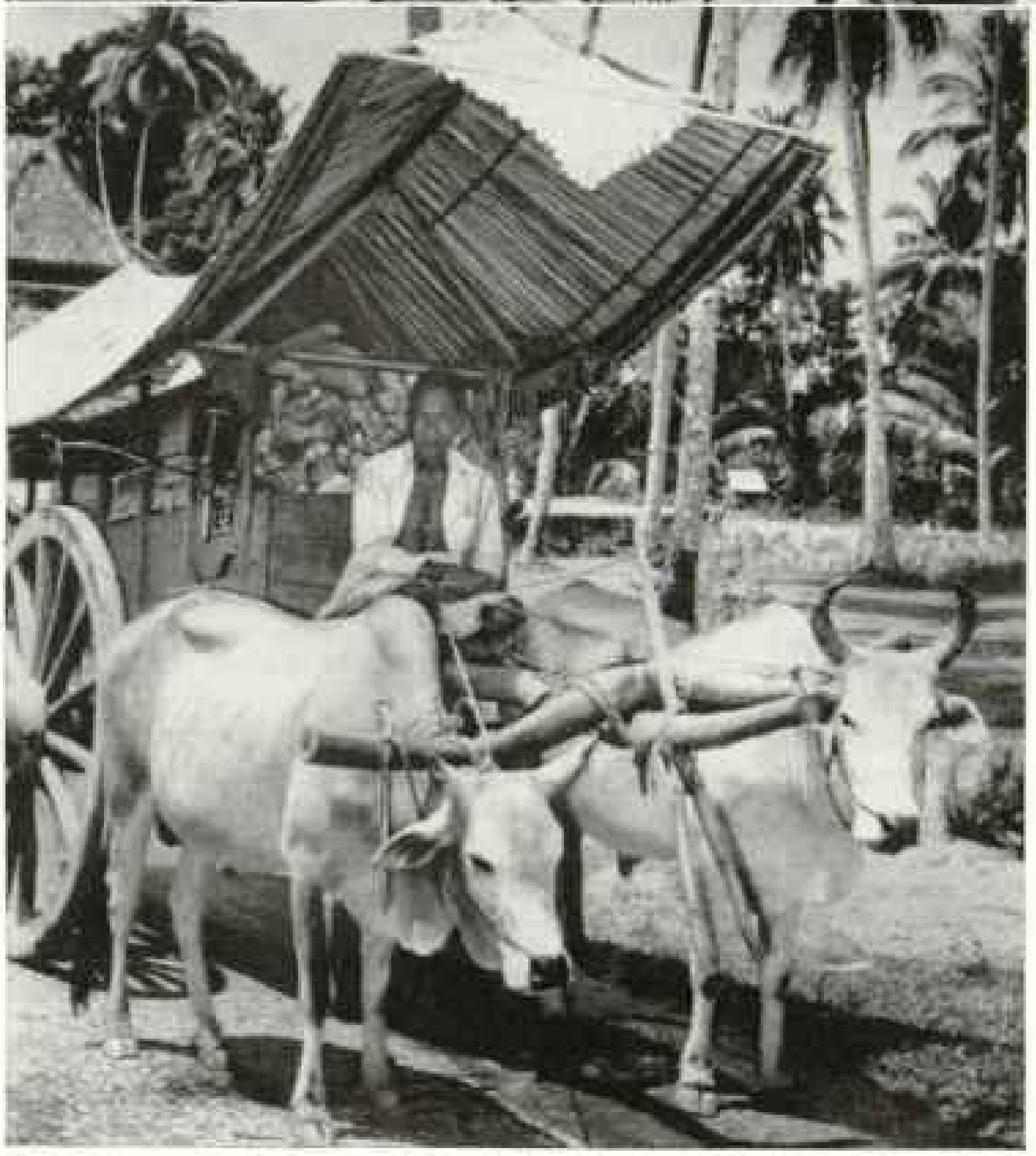
"There's much to do yet," our guide said. "We plan to build a big secondary school and community playing field, bring in electricity, and establish several new shopping centers. And even that's only a beginning.

"The villagers have almost everything city dwellers have, even piped-in music programs."

"Does the Government do all this?" I asked.

"Most of it. The Malayan Chinese Association, Red Cross, and other organizations help. The people dismantle and rebuild their homes, and Government supplies lorries and labor for hauling. Each family receives a small money grant to get started. Householders get long-term occupation licenses and pay $2 a month (about 65¢ U. S.) for 'rent.'

"New villagers are learning to live together, and a real community spirit is developing. Committees of townspeople run the schools. Some villages elect representatives to work



These Monkeys Pick Coconuts

A familiar sight on the highways of Johore is the young cyclist with a *berok*, or coconut monkey, perched on the handlebars. The youth is sure to be an itinerant coconut picker. His agile assistant shinnies up tall palms and, guided by a leash, twists each nut until the stem breaks and the fruit crashes to the ground. Holding on with his feet, the berok works upside down.

This laughing group performed for the photographer. A natural clown, the big monkey on the central wheel gave a stellar performance. Soda pop rewarded him and his comrades.

Awninged Oxcarts Set Malacca's Pace

Once a bustling port, Malacca town is now the quiet capital of the third smallest member of the Malay Federation (page 726). Rubber planters, briefly escaping the Red terror, fill its comfortable inn during week ends. Peddlers on the hotel veranda sell Malacca canes.

with the Government's district officers. First time any of them ever voted.

"About 85 percent of the new villagers are Chinese. They are beginning to make friends outside their own clans, exchanging ideas and getting new points of view. Some have joined the Home Guard or are active in other projects."

Captured documents prove that resettlement, with strict food control, has dealt terrorists a telling blow. Food has become their absorbing problem. To get it, they must venture out of the jungle more often, and thus their casualties have mounted. Some have started jungle farms, which are easily spotted from the air. In some districts resettlement has seriously disrupted the underground Min Yuen.

Tin Dredge Digests Mountains of Mud

In the green valley of the Klang River we boarded one of the world's largest tin dredges. Clanking, roaring, floating in a lake of its own making, it looked like a misplaced factory.

High on her "bridge" I watched an endless chain of gargantuan buckets haul up loads of ore-rich mud and, wailing like lost souls, dump them into a giant hopper. Near by a scale indicated that the buckets were digging at a depth of 70 feet.

"They will go down almost twice as deep," said the "skipper," Mr. Edwin C. H. Smith. "We raise and lower the ladder they move on according to the contour of bedrock. They bring up a lot of mud, too—enough every nine months or so to equal the volume of Egypt's Great Pyramid."

Pulled by steel cables anchored ashore, the electrically driven monster—its "deck" is about the length of a football field—eats its way back and forth across an 800-foot line, advancing about 20 feet in three days. A maze of heavy internal machinery digests its earth food, grading the silt, subtracting and refining the ore until it resembles black sand, and piling the residue astern in huge mounds. Thus, slowly, inexorably, the lake moves forward with its creator.

"The ore, only a small fraction of the tons of mud we dredge up, is about 75 percent tin," Smith told me.

"It goes by rail to Port Swettenham and by ship to Singapore, where it's smelted. We get a nice by-product, too—about 20 ounces of gold a month."

When I mentioned the Emergency, the skipper smiled.

"There's not a gun among us here," he said. "They had a battle royal down the road a few days ago, and there are terrorists in the hills over there, but we haven't been bothered. The worst part's the curfew. Night after night our engineers have to be in their compound at 6:30. The poor chaps find it tiresome. I live in K. L. myself. Haven't had any trouble, but this still isn't the healthiest place in the world, especially for a bloke like me who expects to retire in another year."

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Singapore Headlines Shout Big News

The Straits Times announces the death of Manap Jepun, a notorious Communist bad man. Tough Gurkhas, Britain's Nepalese troops, shot it out with him in the State of Pahang.

Before leaving, we inspected the company's model village, where 1,500 Malay, Chinese, and Tamil Indian workers live together in fenced-in security. Neat white aluminum-roofed cottages stood in rows around a central green. Small ponds, stocked with fish, dotted the spick-and-span grounds. Eighteen months previously this was barren tin tailings, like the waste astern of the dredge.

I noticed off-shift Tamils building a small Hindu temple. Other workers were doing chores around home or lounging in the town canteen. Villagers crowded a well-stocked cooperative store, where prices averaged 10

percent below K. L.'s. In deference to Moslem Malays, it sold pork in a separate building. A workers' committee manages the store and represents the community in relations with the company. Houses, water, light, and medical services are free.

Mines Dot Kuala Lumpur Suburbs

"Not dizzy, are you?" asked young Douglas Lee. We stood high atop a fragile-looking bamboo structure that resembled an Oriental roller coaster. Before us stretched a yawning abyss, an open gravel-pump tin mine.

Near K. L.'s busy airport, the mine belonged to Lee's father. Workers on the bottom of the huge hole, 110 feet below us, hosed the mine's earthen sides with powerful jets of water. Dotting the bottom, colossal natural limestone columns, like stalagmites, dwarfed the men and gave the gaping man-made pit a weird aspect.

"It's quite simple," Lee said. "The jets of water excavate the dirt—they reach between the stone pinnacles, where dredge buckets can't go. Often the richest ore is there. The muddy water, containing the ore, is pumped up here. Then it flows along this sluice at a gentle grade. Low boards are laid across the sluice every few feet; being heavier than the mud, the ore settles and collects behind these 'steps.'

"You'll see dozens of these sluices-on-stilts around K. L. Their grade has to be just right. A bit too steep, and the water rushes along without dropping its ore. Too gentle a slope, and mud as well as ore collects behind the steps. Chinese build these structures; their know-how is passed down from father to son. They can't tell you how they do it, but they build the sluices perfectly."

Later I stood on the brink of Hong Fatt Mine. It seemed as if all Egypt's pyramids could be stored in one corner. Steam shovels that looked like toys took flea bites from its earthen sides. Trucks carted the dirt to cable cars that lifted it to ground level.

"One of earth's biggest opencast tin mines,"

← Britain's Malaya Commander Tackles a Tough Problem: Getting Information

Intelligence is the security forces' crying need. The Government must know what the Communists plan, but fear of Red reprisals silences many potential informers. To get tips, troops enter terrorized villages and distribute questionnaires. They collect the answers, sealed but unsigned, in locked boxes. Here the High Commissioner, General Sir Gerald Templer (in mufti), helps staff officers empty secret lockers after last April's Operation Question (page 190).

▼ A Malay patrol closing in on a terrorist camp wades waist-deep in a mountain stream. Opposite: A British paratrooper drops into jungle, the Reds' favorite cover.

212 © British Information Services

Guerrilla-hunting Tommies Grab a Suspect in His Jungle Hideaway

Day in, day out, Malaya's manhunt goes on. Security forces, probing the vast, forbidding jungle, capture or kill about 150 guerrillas a month. Some 95 percent of the terrorists are Chinese. This unarmed prisoner received a fair trial. If he had been found possessing a gun, he might have been hanged.

my guide said. "It's all mechanized, and it's Chinese-owned. As a matter of fact, nearly 40 percent of our tin comes from mines owned by Chinese. And Chinese estates supply an increasing amount of Malayan rubber, too."

Tin and rubber, vital assets of the free world, are twin giants among the varied products of Malaya. In recent years this prize pair has brought the British more greenbacks than all the United Kingdom's direct trade with America.

Thanks to the Emergency, we had a close-up look at a sampling of Malaya's aboriginal population without the rigors of a jungle trek. In his cluttered museum office we called on bearded Dr. Peter Williams-Hunt, Protector of Aborigines.

"Drive out to my place this afternoon," he said, "and meet some of our first families."

When we arrived, the doctor ushered us into the living room of his bungalow. Half a dozen aboriginal men and women, dressed in scanty loincloths, sat cross-legged on the floor looking at NATIONAL GEOGRAPHICS.

"I'll bet you staged this," said Joe Roberts, smiling.

"Not at all," said the doctor. "They sit and look at my GEOGRAPHICS by the hour."

While we talked, the tribespeople went on looking. Occasionally one would giggle at a picture and pass the Magazine around. Western clothes styles usually caused the amusement, I noted.

Hearing low musical notes, I looked around and saw a young aboriginal girl, perched on a window seat, playing a nose flute. When

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Taiping Rehabilitation Camp Turns Red Sympathizers into Loyal Citizens

Few men enter this school with more than first-grade learning. Leaving, they know the three R's, the basic structure of Malaya's government, and a trade. Like college alumni, many graduates return for camp reunions. This teacher knows what he is talking about; he's a reformed Communist (page 220).

she caught my glance, she skittered away.

"Malaya's 1947 census shows 35,000 aborigines," the doctor was saying. "A very low estimate. There are probably twice that many, perhaps 100,000. They dwell mostly along rivers deep in the jungle, living much as their ancestors did thousands of years ago.

Sanctuary for Aborigines

"There are about 60 tribes altogether and almost as many dialects. The aborigines vary from wandering hunters who live in rough lean-tos to farmers with elaborate communal dwellings that house a hundred.

"Terrorists prey on these people," the doctor continued. "We can't do much about it, but behind the bungalow I've set up a sanctuary of sorts. Sixty aborigines representing seven tribes from all over Malaya live there. We teach them crafts and how to grow vegetables. I'll show you."

In a palm-shaded grove we visited half a dozen thatched bamboo cottages. Their occupants varied from smiling Negrito pygmies wearing gay flower headdresses to strapping jungle giants who were fashioning blowguns. Women wove baskets or rattan pouches, while their offspring wriggled in the dirt.

Nodding at the blowgun artists, Jim said, "I see they're wearing Boy Scout belts and wrist watches."

"So they would in their native haunts," answered the doctor. "Even the most primitive aborigines exchange jungle products for iron, salt, and a few of civilization's knickknacks. Once I trekked seven days to visit a remote

tribe I thought had never seen a white man. When I arrived, they said, 'Glad you've come. Got any fuel for our cigarette lighters?' "

Indicating a long hut where several women roosted like hens on door ladders, he said, "They're Kanaq people from Johore, the smallest tribe in Malaya; only 34 of them left. They're all here for safekeeping."

We returned to the bungalow, and the doctor switched on his recording machine. Drumbeats and a weird chant filled the room. So did dark shadows that glided in and squatted on the floor. Soon naked bodies were swaying and hands thumping the floor. The doctor's guests, carried away by the magic of rhythms on tape, were home again.

Wild Elephants Pull Up Rubber Trees

Next day we soared above Malaya's jungle-swathed backbone en route to Kota Bharu, capital of the State of Kelantan near Thailand. When we touched down at seaside Kuantan, I struck up a conversation with a white-haired planter.

"Elephants, not terrorists, make life difficult for me," he said. "They delight in pulling up my young rubber trees."

Following the coast, we cruised over miles of palm-fringed beaches. Heart-shaped weirs and Malay fishing craft dotted the waters. Rivers, snaking from cloud-draped mountains, spilled cargoes of yellow mud into the sea. Villages nestled among coconut groves.

Near Kuala Dungun we circled Bukit Besi iron mine, biggest in Malaya. Puffing steam shovels, scooping up rust-red earth, were scalping the iron mountain. At beachside, lighters took the ore from trucks and passed it to freighters. Destined for Japan, it would end up in Australia as sheet metal.

"These northern States," Jim told me, "are somewhat isolated from the rest of Malaya. Kelantan is the least changed, the most Malay part of the Federation.

"The people are mostly rice farmers, fishermen, or rubber smallholders, and they cling to old customs and costumes. Here it's peaceful and idyllic. You're leaving the Emergency behind for a while.

"And it's a photographer's paradise," he added. "Kelantan costumes are made for Kodachrome."

Jim hadn't exaggerated. Kota Bharu was alive with moving, changing colors. Exotic flame-of-the-forest trees splashed the town with crimson. Women wore flowered sarongs, gay jackets, and bright head kerchiefs. King Solomon might have envied the men's array, which, like the women's, featured gay sarongs and jackets.

With Kelantan's development officer, T. William T. Bangs, a longtime Malaya resident and a convert to Islam, we toured the town. In a palm-shaded lane we watched a new mobile rice mill thresh mounds of golden grain for waiting farmers. Near by we looked on while housewives prepared hand looms and wove cloth for sarongs (page 201).

In Kota Bharu's arts and crafts center we peered over the shoulders of craftsmen tooling exquisite Kelantan silver. One, a white-capped *haji* (a Moslem who has made his pilgrimage to Mecca), put finishing touches on a mace for the State Council of Kedah.

"We're dedicating a country bridge this afternoon," Bangs said. "Perhaps you'd like to come along."

We did. Turning off the main highway, our Land Rover followed an obviously new grass-covered road between rice fields.

"This we call a 'farmers' road,' " our guide said. "We have more than 500 miles of them in Kelantan. Farmers give the land and labor; Government, the tools and material. We accomplish a lot that way, cooperatively—build schools, playing fields, and bridges like the one we're opening today, for instance."

At the bridge a crowd waited. In a temporary lean-to we met local officials, led by a dignified headman, and toasted the bridge with soda pop. At the critical moment it was discovered that no one had brought a ribbon. A young veterinarian saved the day by producing a roll of bandage, which he tied with a professional touch across the bridge. Bangs spoke briefly in Malay and was answered by the headman, who then snipped the "ribbon."

"Big doings tonight," announced Bangs. "We'll come back after dinner."

Malays Celebrate by Moonlight

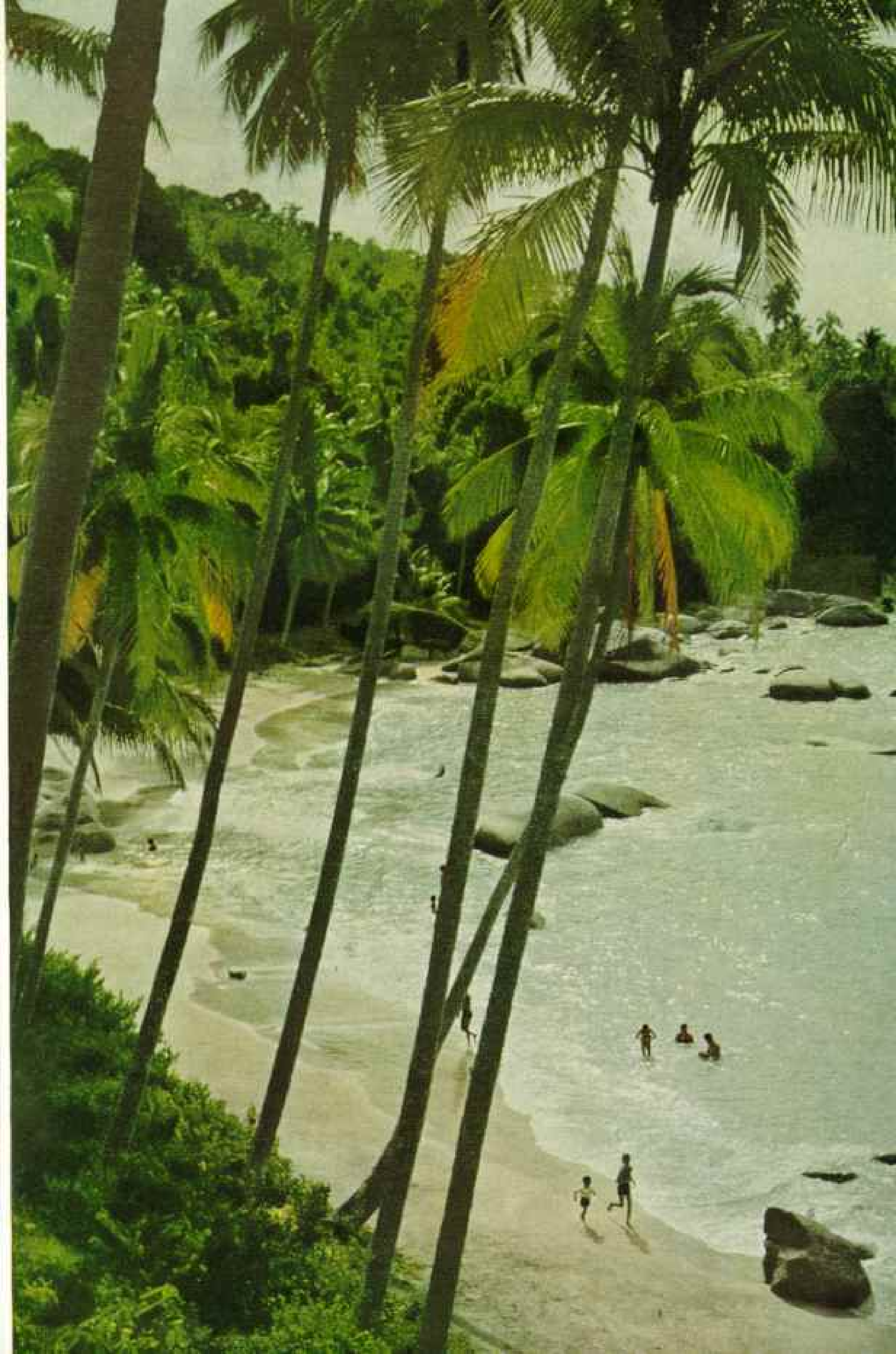
Under the moonlight we watched a gay celebration like a country fair. Malay families in holiday garb and mood flocked to it from miles around. Booths sold soft drinks, coffee, and snacks.

In one field men and boys, jumping up and down, pounded deep-throated *rabana* drums made of buffalo hide stretched over hollow tree trunks (page 221). When they stopped, exhausted, squatting figures thumped small coconut drums.

Near by, nimble-footed boys thrust and

Palm-fringed Beaches Indent ➤ the Shores of Penang Island

Lush, mountainous, and of surpassing beauty, Penang is Malaya in miniature. Rice fields, coconut groves, and vegetable gardens cover its lowlands; rubber trees and jungle clothe the hillsides. Chinese and Malay villages alternate on a scenic road girdling the island.



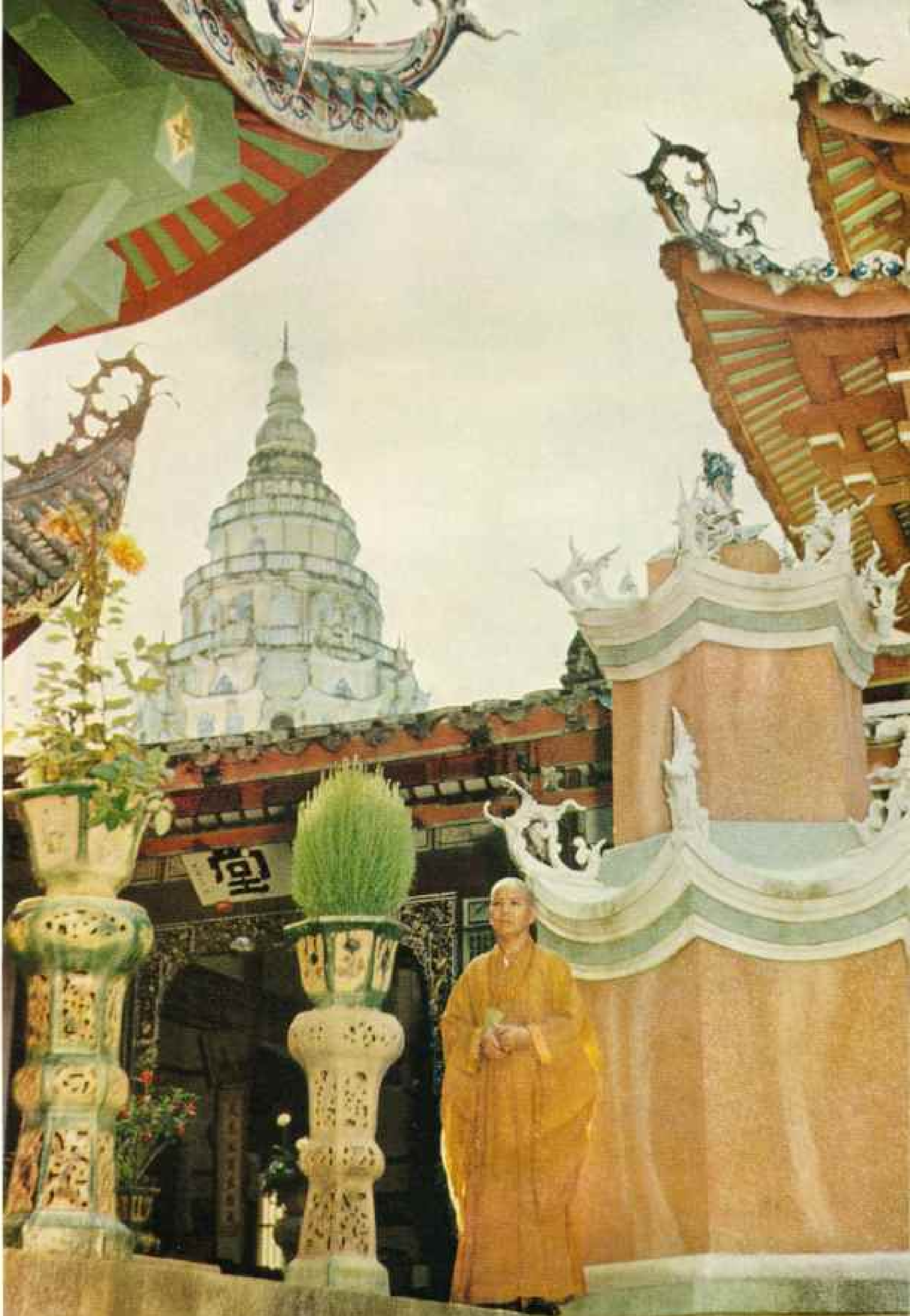
▲ Kota Bharu Girls Paint Sarongs; Flowers Blossom in Batik

Batiks are used for sarongs, shawls, and turbans. Flowered ones are women's; men stick to stripes or plaids. These batik workers apply colors to a stenciled fabric. Protecting the design with molten wax, they dye the background, then remove the wax.

▼ Rice-straw Boats Sail Inky Seas in a Singapore Home Workshop

The artist specialized in landscapes until a United States naval attaché interested him in boats. Now the clipper (lower right) is his best seller.

→Kek Lok Si, a Buddhist monastery, covers 30 acres in Penang. Its main pagoda rises in seven tiers.



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Bare Feet Thresh Rice Between Rows of Stately Palms in Malacca

Malaya produces about half the rice it eats; the rest comes from neighbors, chiefly Thailand. Grain is rationed at 10⅝ ounces a day. Harvest time is always festive. Reapers, using old razor-blade knives, cut each stalk individually so as not to disturb the "spirit" of the rice.

Director, Musicians Work Backstage at a Shadow Play

Screen plays started centuries ago as performances in which ghostly ancestors visited the living; the idea came to Malaya from Indonesia. First used to teach religion, the dramas became stylized theater with a moral. Now skits and slapstick comedy alternate with legends.

Flat, painted figures cut from parchment serve as actors. Bamboo sticks move the jointed arms, and an electric bulb, replacing yesteryear's flickering oil lamp, casts shadows on a screen, to the amusement of the audience out front.

Star of this show in Kota Bharu was the puppeteer and storyteller (white shirt, center). Employing bass or falsetto, he recited the lines of scores of characters, male and female, and breathed life into his varied cast.

Meanwhile orchestra members, laughing at every joke though heard a thousand times, beat xylophones and cymbals and tooted flutes.

Puppets on stage but not in movement are wedged into a banana log at the bottom of the screen.

Kodachromes by National Geographic Photographer J. Baylor Roberts

The Fishing Fleet's In at Perupok! Housewives Hunt Bargains; Youngsters Help with the Catch

This village on the South China Sea has some 300 boats. Their home-coming presents an unforgettable sight. Nearing shore, fishermen drop square patched sails and grasp paddles. Shouting in exultation, they ride long swelling combers to perfect landings on the beach.

Boom! Boom! Boom! Go the Drums. Their Rumble Carries Miles

Kelantan's isolated people cling to old customs and traditions. Nearly every village in the State has its set of big bass *rubana* drums. Their effect is that of barbaric tom-toms; the deep-throated booming quickens the pulse.

Frenzied performers, jumping up and down like small boys at play, enjoy the release of surplus energy. They spell one another without missing a beat. Contests between villages may last 24 hours.

Apparently without signal, the rhythm changes or suddenly stops. Any inattentive drummer who makes an extra beat becomes a laughingstock.

These instruments were hollowed from tree trunks, faced with taut buffalo hides, and brightened with painted rattan.

Other amusements are movies, sword dancing, hit-slap-and-kick boxing, and top spinning (page 200).

The village headman's house supports a loudspeaker for public announcements.

Kodachromes by National Geographic Photographer J. Baylor Roberts

Kodachrome by National Geographic Photographer J. Baylor Roberts

A Mournful Wail from Skipper's Buffalo Horn Calls His Fishing Crew to Sea

Owners name their craft for sea birds; they take pride in ornate bow panels and tapering prows. Made of hardwood, the boats last for generations. This man works off the Beach of Passionate Love near Kota Bharu.

parried in the Malay dagger, or kris, dance, a stylized version of duels that settled village disputes long ago. Later we watched a toothless veteran show a brash youth a few tricks in the local form of Thailand's hit-slap-and-kick boxing. For both events a string and drum orchestra set the pace, now furious, now slow and rhythmic.

Biggest attraction was the top-spinning contest, strictly a man's sport in Malaya. With motions like a big-league pitcher throwing sidearm, contestants spun 10-pound tops wound with rope. Excited onlookers laid bets on which top would spin longest. The record in this town, we were told, was one hour and 20 minutes (page 200).

Booming Voice from Hollywood

As we crossed a rice field after dark, I heard a voice boom, "I'll hound you out of every island in the South Seas."

Turning quickly, I saw a crowd intently watching a portable movie screen on which villain faced hero in the movie version of Garland Roark's action-packed thriller of clipper ship days, *Wake of the Red Witch*.

"It's curious," Bangs commented. "Malay youngsters prefer the old shadow plays. When they're about 14, the cinema captures them, but sooner or later they return to their first love, the leather puppets on a stick."

On the crescent palm-bordered beach at Perupok we stood with a young Malay fisheries expert and watched the village fleet come home. Nearing shore, boats dropped their patched square sails. Long, swelling combers caught the small craft and hurled them beachward. Fishermen, holding paddles aloft, shouted in exultation; deftly they maneuvered to perfect landings (page 220).

While housewives bargained and youngsters helped unload the catch, we strolled the beach.

"Perupok has 300 boats," our expert said with pride. "They range from single-man craft to ones with crews of 25 or 30.

"Half the boats go out at dawn, while the rest sail at dusk for night fishing. The big boats use nets; the small ones, hooks. Both catch mostly mackerel and herring. The season lasts from March to August, when the monsoons begin."

"How far to sea do the small boats sail?" I asked.

He spoke with a fisherman and answered, "The length of time it takes to smoke a cigarette—after the palm trees disappear below the horizon."

We visited another, better known beach near Kota Bharu. It had been known for centuries as the Beach of the Fire Ants—until it was bought by an enterprising Malay who built cabins and a dine-and-dance along the shore. With an eye to business, he quickly changed its name. Now it's famous as the Beach of Passionate Love.

On this pleasant strand with the now enticing name we found Malay couples clad in street clothes sitting sedately under parasols. Bathers braved the surf in full-length sarongs. Children frolicked; a melancholy dog sat at water's edge gazing out to sea. Down the beach a lone fisherman called his crew with a bass-voiced buffalo horn (opposite).

At a garden party which featured traditional Malay sports we met the Honorable Frederick William Norton Churchill, British Advisor to the Sultan of Kelantan. Known to friends as "Tony," the B. A. bears a striking resemblance to his famous relative, Britain's Prime Minister.

When I first saw the B. A., he was furiously beating a huge rabana drum, keeping up with the best of the Malays. When we were introduced, he mopped his brow and said, grinning, "Wonderful, those drums. Should have one in my office. When things go wrong, I could take it out on the drum!"

Later, as we watched a Malayan dance, he said: "It's an unusual job, being a B. A. I head a score of committees and organizations around here, from Boy Scouts to the Commission on Dredging and Sanitation, but, like my counterparts in the other States, I've no legal or political power. Peculiarly British. It's always been that way with B. A.'s."

Eyes twinkling, he added in a stage whisper, "We only *advise*."

Penang, Malaya in Miniature

Air-hopping across the peninsula, we visited the island of Penang, Britain's first Far East possession. Before the British arrived, it was long a favorite haunt of Malay pirates.

By cable car we climbed Government Hill for an over-all look at this "Pearl of the Orient." In all directions verdant hills rolled to the sea. Junks, freighters, and green islets, half obscured by mist, flecked the opalescent waters. The pink roofs of George Town, the island's metropolis, covered a fingerlike peninsula pointing at the mainland.

In a small English car we drove the scenic road that girdles the island. Penang, we discovered on this trip, is Malaya in miniature. Coconut groves, paddies, and vegetable gardens cover small lowland areas; rubber trees and jungle clothe steep hillsides (page 215).

Busy Chinese hamlets straddle the road, and Malay villages of carved wooden bungalows stand on stilts among tall, graceful palms.

George Town, with its modern hotels, stores, banks, pleasant suburbs, and crowded harbor, seems a smaller Singapore. Barnacled freighters discharge tons of Made-in-Britain goods

Perak Enthrones a Sultan with Oriental Pomp

Nine States in Malaya have their own native dynasties. Perak's royal house traces its origin to the last ruler of Malacca, who was driven out in 1511 by the Portuguese. The family has three branches, and sultans are selected from each in turn.

Here in April, 1949, Raja Yussuf Izzudin Shah assumes the throne of the Federation's richest State, its chief tin and rubber producer and a prime target of Red terrorists (page 187).

At this moment His Highness receives the Golden Dragon Armlets, symbols of power, from kneeling heralds. The Sword of State (on golden cushion, right) awaits his hand and the oath of office. Other royal regalia, the Golden Chain, the State Seal, and the Talisman of Petrified Dew, remain to be presented.

Climax of the centuries-old ritual arrives when the chief herald whispers into the Sultan's ear the Ancestral Secret, which is known only to them.

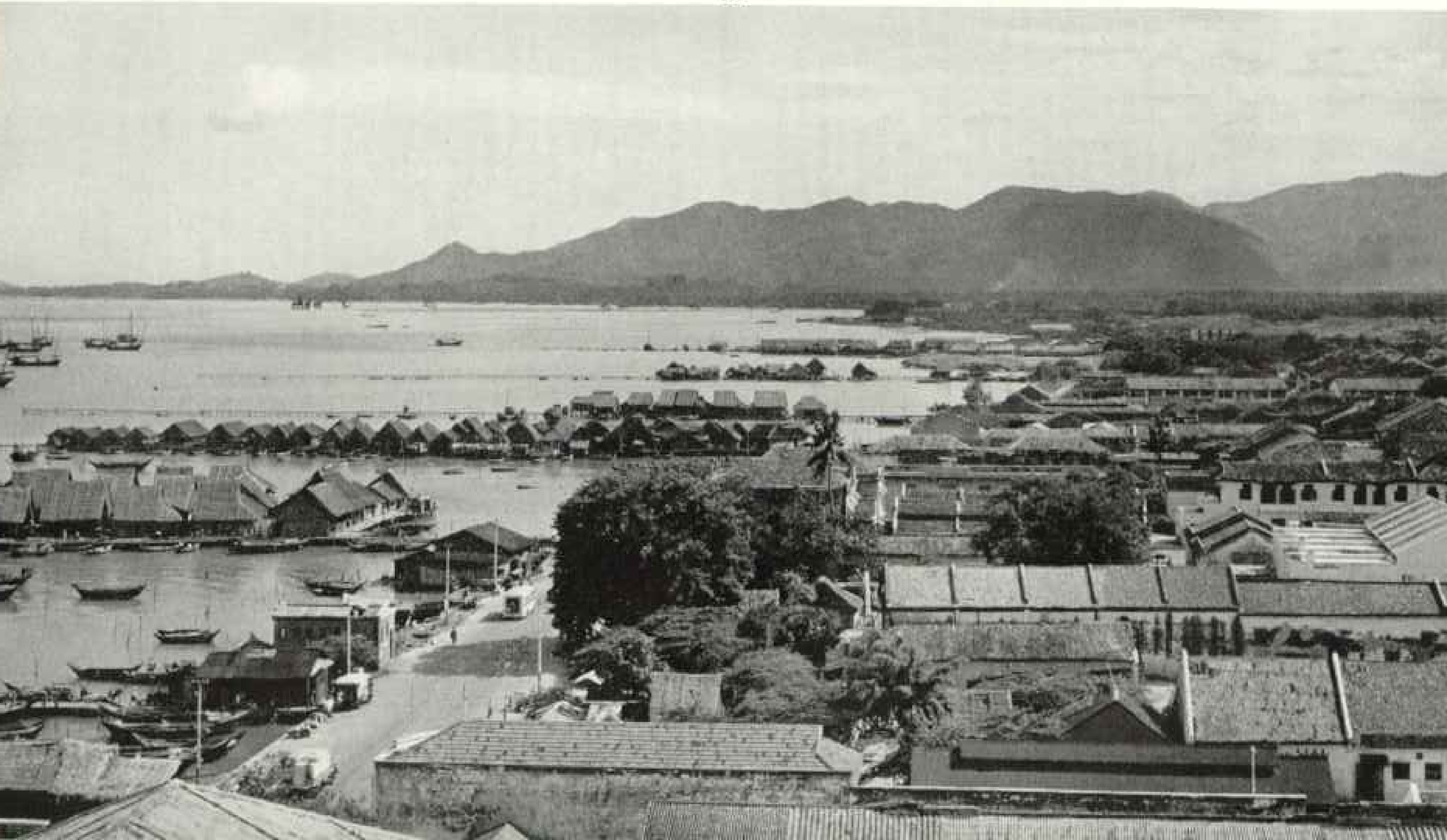
Sir Henry Gurney, Britain's High Commissioner for the Federation of Malaya when the installation took place, shares the dais. Red terrorists in ambush killed him October 6, 1951.

Seated before the throne, turbaned princes of the royal house serve as witnesses. Perak's heir apparent sits on the extreme right; his attractive consort watches from the center left.

David John © Graphic Photo Union

Thatched Cottages Walk Out to Sea on Stilts in George Town, Penang. Their Tenants Are Chinese Stevedores

Prosperous George Town handles the trade of northern Malaya, southeast Thailand, and some of Burma's. Lighters and coastal craft use this section of the harbor. Ocean freighters tie up at modern docks or drop anchor outside.



and load rubber, tin, and pungent copra for world markets. Out in the harbor junks and lighters swarm like water bugs around anchored ships.

A free port like Singapore, George Town is the two-way funnel through which pours the foreign trade of northern Malaya, southeast Thailand, and to some extent of Burma. When cruise ships call, the port also does a brisk tourist business (page 225).

As we drove past a wild section, our guide pointed to high jungle-covered hills. "That's where our terrorists hang out," he said.

The idea of terrorists on Penang seemed wholly foreign to the island's peaceful air.

"Oh, we have them," he assured us. "They live in caves up there. So far, they've eluded every patrol. Even have a printing press and circulate propaganda."

Terrorists Learn Three R's

Hopping to Taiping in mountainous Perak, we saw Malaya meeting its Emergency with the three R's. There in 1949 the Federation founded a rehabilitation camp for surrendered terrorists and Chinese youth caught flirting with the underground Min Yuen.

"We have 400 here, all Chinese," Mr. Anthony T. R. Jackson, the director, told us. "On the average, they've had only a year or two of schooling. So we stress literacy, the learning of a trade, and citizenship."

With Jackson we toured the camp, which resembled a model village more than a reform school.

"We have educational movies twice a week," he continued. "Other evenings the boys play ping-pong or mah-jongg, listen to the wireless, or write letters. It's a big day for most of our chaps when they *can* write home. We let them listen to Communist Radio Peiping, too, if they want to, but nobody does."

In classrooms students rose and said, "Good morning, Sirs" in unison. One class studied from a text entitled *How Malaya is Governed*. Another struggled with the intricacies of Arabic numbers; each youth had an abacus to check his work. Teachers of both classes were ex-Communist leaders (page 213).

"When they leave here, we write them letters of recommendation and help get them jobs," the director said. "Only about one percent are required to report periodically to the police. We haven't heard of any backsliding yet, and our 'graduates' are a good influence in their communities.

"Most amazing is their loyalty to the camp. About 170 of them came back to a recent reunion. Many return from all over Malaya just to get the camp's seal on their new identity cards when the old ones expire. It's getting to be like an old school tie."

On the way back to Singapore we broke the journey with a short week end in historic Malacca.

Highway traffic on the way, mostly trucks, moved swiftly—no dawdling Sunday drivers here. In places reassuring armored patrols flashed past. From time to time Jim indicated "hot spots" along the road where recent ambushes had taken place.

Roadblocks at towns stopped us; polite signs announced "Please stop. Police check. Thank you." Other barriers, upended beside fenced villages, awaited the evening curfew.

In two days of driving we were scarcely out of sight of rubber. Latex drips into thousands of cups on roadside trees. Householders, keeping a few rubber trees as a truck farmer might a cow, hang white latex sheets on bamboo poles like wash to dry.

But near the coast rubber gives way to swamps, coconut plantations, and rice fields where farmwomen clad in bright sarongs thresh grain with bare feet (page 218).

Old Malacca combines a long past with an unhurried present and a forward look. At town limits signs warned motorists "No Hooting in Malacca Town." Bills pasted on walls and fences reminded citizens of a duty: "No Register, No Vote."

Malacca: Six Flags in Five Centuries

Six flags, native and foreign, have waved over this first European foothold in Southeast Asia. Portuguese captured it from a Malay sultan in 1511; after 130 years the Dutch wrested the colony from them. In the 1820's expanding Britain hoisted its flag over the town, where it waved until Japan invaded the peninsula during World War II. Now the striped banner of the new Federation of Malaya flutters from public buildings.

More than a century ago Singapore and Penang, boasting superb deep-water harbors, left Malacca far behind commercially. Today, with a population of 50-odd thousand, it is the peaceful capital and market center of the Federation's third smallest member.

Little remains of Malacca's Portuguese days—a remnant of the old city wall, a few family names, house steps covered with bright tiles, and the dramatic hilltop ruins of St. Paul's Church where lay the body of St. Francis Xavier in 1553. Working out of Malacca, "the Apostle of the Indies" carried Christianity to the East Indies and Japan. He died near Canton in December, 1552.

Oxcarts with thatched, sway-backed canopies still rumble through Malacca's town square (page 208). Bordering it, sturdy red buildings and clock tower recall the rule of Dutch burghers.

Rubber planters and their families, enjoying

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Ingots in a Singapore Smelter: The Alchemy of World Trade Will Turn This Tin to Gold

Malaya is the world's leading tin producer. Only rubber brings more dollars to the country. Smelters in Singapore and Penang refine Malayan ore, plus sizable amounts from Thailand and Burma. The United States takes the lion's share. Industry uses the metal chiefly for solder, brass, bronze, bearing metals, and plating of steel cans and kitchenware. Teakettle at left is often heated by hot ingots fresh from the molds.

a week-end respite from the Emergency, filled the comfortable Rest House inn. On its wide veranda I bargained with a white-haired Malay for a Malacca cane, the specialty that has carried the name around the world. Jim, acting as interpreter, ended up with an unwanted swagger stick as part of my "bargain."

In his ancestral home on Heeren Street I drank tea and talked with sage Dato Sir Cheng-lock Tan, a founder and president of the Malayan Chinese Association. Opening a well-thumbed Chinese classic, my host read, "The world must be one or perish."

"That was written centuries before there was a Europe," he said. "It's truer today than it was then.

"And," he added, "you can say the same about Malaya. All our people—Malays, Chinese, Indian, European—must cooperate to form one country, one people, and one government within the Commonwealth, or we will perish as a nation."

Next day we crossed Johore Strait on the giant causeway that links Singapore Island to the Malayan mainland. Eleven years ago weary British troops, pressed by Japanese invaders, retreated over this causeway and dynamited it. Within two weeks the Japanese crossed the strait, and "impregnable" Singapore with its mighty naval base fell.

As we drove again through the streets of this pulsing metropolis, I recalled how very British it seemed when I first arrived from Indochina's French-flavored Saigon.

Singapore a London in Asia

Londonlike traffic, filling main streets and whirling around "roundabouts," keeps to the left. Commuters jam big double-deck buses. Billboards suggest that one drink Bovril, try Guinness, or ask for Players, Please.

Streets bear names like Mountbatten, Lavender, High, and St. Andrew's. Men in white play cricket on the water-front green. Westminster chimes in the cupola of Victoria Memorial Hall announce the time (page 203). My taxi driver, a turbaned Indian, spoke English with an Oxford accent.

Behind its British façade Singapore teems with Oriental life and color. Four out of five of its people trace their ancestry to China. Malays, Indians, a few Eurasians, Europeans, and many other races make up the remainder.

In 1819 farsighted Sir Stamford Raffles,

Chopsticks Fly as Chinese Workers Finish Lunch in a Singapore Rubber Warehouse

Southeast Asia produces 95 percent of the world's natural rubber. Singapore, acting as middleman, collects most of it for transshipment. Workers sort, grade, and bale the smoked sheets; they scrub and resmoke the low-grade product from small plantations. These women work an 8-hour day.

working for the East India Company, obtained almost uninhabited Singapore Island from the Sultan of Johore. Its magnificent harbor and strategic location soon boomed his settlement into a world port.

Today Singapore still lives by its vast, far-flung maritime trade. In 1951 some 6,000 ships, flying the flags of 20 nations, moved a whopping 9,000,000 long tons of cargo in and out of its harbor.

"Singapore's the warehouse of Southeast Asia," a Government trade expert told me. "We're middlemen. We collect, distribute, break bulk, sort, grade, ship, and reship. Into this tax-free port pours the wealth of the Orient—tin, rubber, spices, palm oil, pineapples, copra, rattan, timber—to be sent to world markets. In exchange from Europe and America come manufactured goods.

"And Singapore's prosperity depends on the mainland," he added. "The lion's share of the Federation's trade, about three-quarters of its imports and two-thirds of its exports, passes through this port."

In two busy weeks we toured swarming docks and huge rubber godowns, saw tin ore smelted into silvery ingots, inspected blocks of recently built workers' flats (page 199), and visited new streamlined factories.

Hunting local color, we wandered the teeming, wash-draped streets of Chinatown (page 198). In "Thieves Market" and in narrow Change Alley, where every stall advertises a "grand cheap sale," we mingled with bargain-hunting crowds.

Malaya Clinches Badminton Title

Evenings we strolled through Happy World, Great World, and New World, the city's sprawling catchpenny amusement parks. In the jam-packed auditorium of one we watched teams representing Malaya and the United States battle for the Thomas Cup, symbol of world supremacy in badminton. The local team, defending champions, trounced their American visitors, seven matches to two.

Checking out of our hotel, I overheard a conversation between two planters who chanced to meet after a lapse of many months. As they parted one asked, as an afterthought, "I say, what are you doing in Singapore?"

"Short holiday," his friend replied. "Seeing the city lights. And now it's back to the Emergency. Cheerio!"

Vézelay, Hill of the Pilgrims

A Quiet French Town Lives Tranquilly in the Shadow of the Church Where Medieval Christians Once Watched for Miracles

By Melvin Hall

THE little French town of Vézelay, clinging to the brow of an isolated granite escarpment, looks down with quiet serenity upon a favored land, the beautiful, rolling countryside of the former Duchy of Burgundy.

At the town's highest point stands an immense 12th-century edifice, the historic Basilique de la Sainte Marie Madeleine (St. Mary Magdalene), once one of the most important shrines in the Christian world. Tiled roofs gleaming, the houses and shops of medieval Vézelay huddle beneath the church.

Far below, the River Cure winds like a silver ribbon through a narrow, verdant valley dotted with grazing cattle. Gentle hills, their crests darkly wooded, undulate to the horizon in all directions. Slopes and dales are cloaked with a patchwork of aged vineyards, orchards, and fields hedged with blackthorn and hawthorn (pages 230-31).

I have traveled over much of the earth, but few places I have visited can equal the charm of Vézelay. Although I am an American, I have owned a home there for 20 years, returning time and again to breathe deep of the peace which envelops the Burgundian hills.

Crumbling Walls Encircle the Town

France may boast more celebrated hilltop villages, such as Carcassonne,* but Vézelay is fully as rich in romance and antiquity. It lies on the western side of the former duchy, 140 road miles southeast of Paris (map, page 234). Medieval ramparts still girdle the town, though there are gaps where the walls have crumbled or have been used in past generations to build houses.

Today these walls are inviolate. Indeed, the entire village is classified by the French Government as a Monument Historique, and no demolition or new construction may be undertaken without approval of the Beaux Arts in Paris.

My own home was originally an outer bastion of the fortifications, which were rebuilt in the 14th century as a defense against English invaders. The venerable *gentilhommière*, or country house, stands in a corner of a walled garden (page 236).

I often call the attention of visitors to the garden gate, a "recent" structural modification. Carved on its keystone is the re-building date, 1776—quite appropriate for an American owner.

My thick-walled, vine-covered stone house is called La Grangeotte, the name of a long-vanished hamlet which once adjoined the old garden.

I like to think of Vézelay as symbolic of the timeless and enduring in a fretful, fevered world. Only the unending round of the seasons in the tranquil countryside speaks of change.

Colors Beautify the Pastoral Scene

With the coming of spring, white blooms powder hedgerows and fruit trees. Wheat and rye push up tender green shoots. Tall poppies, cultivated for a salad oil obtained from the seeds, lift pale purple blossoms. In summer these shades yield to a deep green broken by flaxen patches of ripening grain. Autumn tints the hedgerows and vineyards with scarlet and russet, and trees flaunt their gaudy leaves before the long winter sleep.

In the beauty and peace of this rural scene there is nothing to suggest Vézelay's bustling, glorious past.

For decades the town's Benedictine abbey existed as a virtually independent theocratic island in a tumultuous sea of feudalism. Its power was such that it recognized neither duke nor seigneur as its master; it acknowledged only the authority of the Holy See in Rome.

In the 12th century as many as 800 monks lived within the walled compound. The abbey's sometimes despotic rule frequently brought it into conflict with the 15,000 burghers residing in Vézelay's fortified enclosure and in the adjoining villages. Jealous lords also challenged its authority with varying degrees of success.

Yet, despite the troubled times, the abbey was one of the most important pilgrimage objectives in the Christian world, ranking close behind Jerusalem, Rome, and Santiago de Compostela in Spain, burial place of St. James the Greater. At that time the abbey's power and prestige stemmed from a general belief that the remains of Mary Magdalene were enshrined at Vézelay.

Just how these relics were obtained from St. Maximin in Provence, a reputed burial place of the saint, is not clear. A young monk

* See "France's Past Lives in Languedoc," by Walter Meayers Edwards, National Geographic Magazine, July, 1951.

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Vézelay Looks Down upon a Patchwork Quilt of Hedged Fields, the Cure River Valley

Medieval travelers made Vézelay one of Christianity's most important pilgrim spots. France preserves the place as a historic monument. These visitors study the countryside with the aid of a tabletop map.

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Saint Père sous Vézelay's Toylike Houses Lie 500 Feet Beneath the Hilltop

Sous, meaning below, serves to identify the village in relation to its better-known neighbor. The Cure, hidden by trees and buildings, winds through town.

Al Taylor

A Farmer's Wife Binds Young Grapevines with Straw. Medieval Vézelay Crowns the Hill

Al Taylor

Visitors Stroll the Old Pilgrim Route Beneath Vézelay's New Gate, Six Centuries Old

When 14th-century travelers approached walled Vézelay, they toiled up this road and through the fortified Porte Neuve, or New Gate. Originally the town had seven gates; only this one remains intact. Old houses seen through the gate are as charming as they are drafty. Many of them lack plumbing.

was said to have transferred the remains about the middle of the 11th century. At that time the abbey had been in existence more than a century and a half.

Reports of the acquisition brought streams of pilgrims to the little hilltop aerie. With the outpouring of wealth from devout penitents, Benedictines built on the site of their old abbey the huge, Romanesque basilica which now crowns the hill (page 235).

A Pilgrim Writes of Miracles

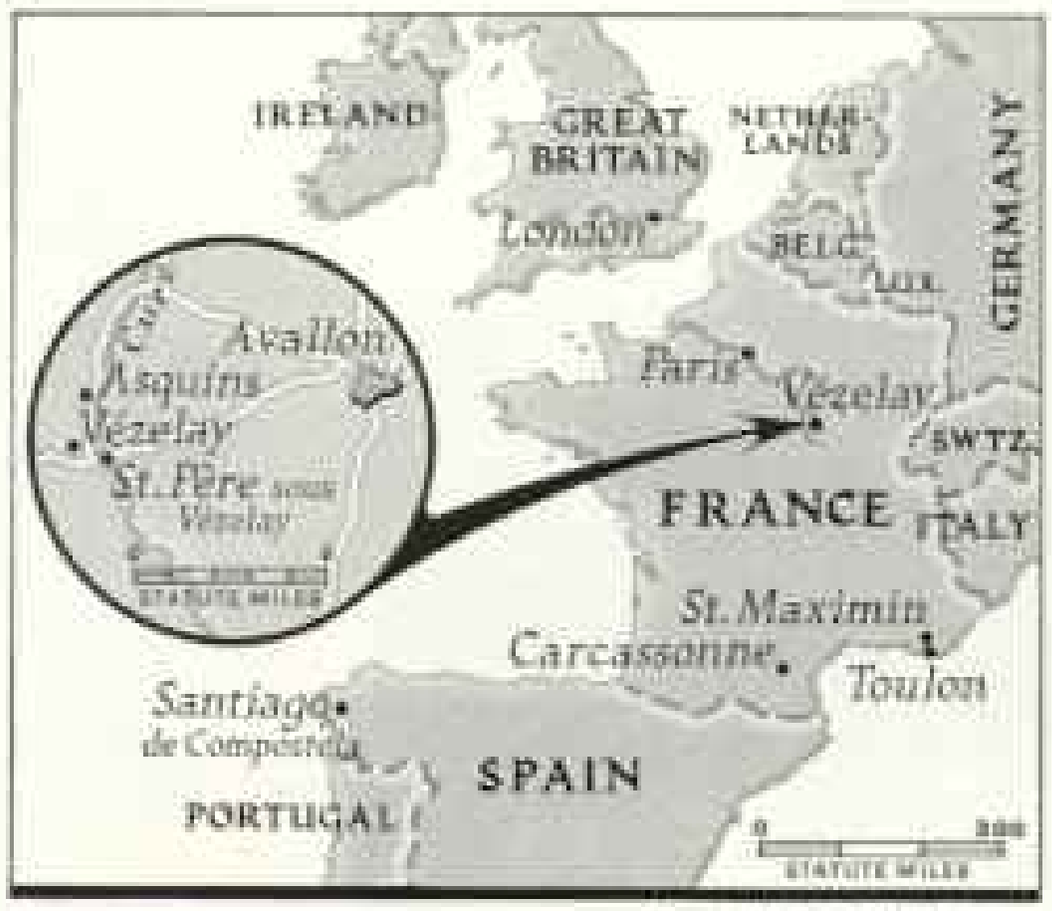
The basilica was dedicated in 1104 by Pope Paschal II, who rode on muleback more than 800 miles from Rome to officiate at the ceremony. Soon the nave, though quite large, proved inadequate to receive the mass of pilgrims, and the narthex, known as the Church of the Pilgrims, was added in front.

Santiago de Compostela preserves in its archives a Latin manuscript written by one of these pious 12th-century pilgrims, who described the Vézelayan scene with these words:

"In this place a great and very beautiful basilica and an abbey of monks were established; the wrongs of sinners are forgiven by God for love of the saint, the blind are restored to sight, the tongues of mutes become unbound, the halt stand erect, those possessed are delivered, and ineffable benefits are accorded to many of the faithful."

Townspeople, as well as the abbey, profited by the influx of pilgrims, and Vézelay grew rapidly. At that time the principal road of approach led through the hamlet of La Grangeotte. Booths flanked the thoroughfare, hawking food, wines, clothing, and objects of silver to be offered at the saint's shrine.

Eventually, for various reasons, belief in the authenticity of the saintly relics was shaken. The influx of pilgrims dwindled. Vézelay shrank to a half-forgotten village. Today, at least in winter, there are barely 250 people living within the crumbling walls, and perhaps another 150 in the outlying hamlets.



Drawn by Irvin H. Altemus

Not until the latter part of the 19th century were other relics of the Magdalene presented to the basilica. Only three Benedictine monks now serve the parish, but pilgrims still come in large numbers for the saint's fête day on July 22, when the relics are carried in procession through the town.

During midwinter the residents of this Burgundian hillside practically hibernate, but with spring comes an awakening.

Each family tills a vegetable garden, often at some distance from home; most families also raise rabbits for the table (page 245). The skins are sold to make children's coats, gloves, and fur-lined slippers.

Often an itinerant purchaser of rabbitskins, making his rounds on a bicycle or motorcycle hung with slightly gory skins, can be heard crying melodiously, "P-o-o-o-o-o d'lapin!" (*peaux de lapin*, rabbitskins). He pays 12 to 15 cents for a good skin, and a little more in winter, when the fur is heavier.

Searching the Woods for Flowers

It is a pleasant May Day tradition in France to have and to give *muguets*—lilies of the valley—a flower supposed to bring good luck. So, just before May Day, everyone not crippled by age or infirmity goes into the woods to gather the tiny flowers, hidden beneath carpets of moss and dead leaves.

I join the hunt in my jeep, usually accompanied by a coterie of children. Their young eyes sparkle as they spy the white blossoms and pluck them with cheerful cries of "*En voilà, un . . . deux . . . trois . . .!*"

Earlier in the spring the little toads begin to pipe at dusk from walls now brilliant with golden-yellow wallflowers. Each toad utters a single peep at regular intervals, always in the same key, like water dripping slowly into a well.

In contrast to this quaint chorus, nightingales trill happily farther down the hillside, and by no means only at night. The males sing while the mother birds are on the eggs. They are heard less often after the eggs are hatched, but the toads keep piping on.

In May and June there comes the hunt for the edible snail. Again young and old take to the fields, stalking with solemn intensity amidst vines and along walls. They carry sticks to poke about in the leaves, and bags or pails in which to deposit their catch.

Black-and-white magpies watch curiously from the treetops, balancing themselves against the wind with long, up-tilting tails; or volplane steeply over the fields. Cuckoos call back and forth across the valley like Swiss clocks, and friendly little lizards scurry up and along the walls.

The snail is a gastronomic delicacy far more widely esteemed in France than frog legs. As in many other culinary preparations, it is primarily the sauce that matters, and for this Burgundians are rightly famed. But you must relish garlic, else snails are not your dish.

Père Olart, my ancient gardener, collects snails, puts them in a bucket with a wooden top, and there "purges" them for 10 days by starvation. When they emerge from this trying period, they are ready for the casserole, but it takes Louise Gautier, my 76-year-old cook, to make the sauce.

Summer Brings a Host of Pilgrims

On holidays and in summer many visitors, including artists, come to Vézelay. Then the shopkeepers, the vendors of post cards, the inn and cafe keepers devote long hours to their saleswork, for these are the "seasons" which must carry them through the year.

During most months there is scant rest for the farmers, a majority of whom live in adjoining villages and hamlets. They manure their fields with load after load of cow dung, hauled in large carts pulled by oxen (page 240), or by two, and often three, stout horses in tandem. Burgundian farmers plow most fields three times a year and rotate their crops from potatoes to wheat, beets, oats, clover, or sainfoin, with a fallow period every three years.

Recently a few small tractors have appeared, but the area does not lend itself to such cultivation because fields usually are small. Under the French system of dividing an inheritance among all heirs, farms have been broken up into small parcels scattered all over the landscape.

Most farmers cultivate with yokes of heavy white Charolais oxen (pages 235, 240, and 241); others with blond-maned, reddish, or roan Ardennais horses. The men talk continually to their beasts in an even balance of

Dreamy Vézelay Soars Above Its Hill Like Some Airy City Imagined by an Artist

This little French town abounds in glorious memories. In the Middle Ages kings and knights met here en route to the Holy Land, and pilgrims thronged the hill to pray at the shrine of St. Mary Magdalene (page 237).

▲ La Grangeotte, a 14th-century Bastion, Is the Author's Country House

When Vézelay was fortified, defenders manned this outpost on the old pilgrimage road, and booths sold objects of devotion. Travelers brought wealth to merchants and gifts to the shrine (opposite). Today the house is owned by an American family.

▼ Parading Children Call to Mind an Easter 8 Centuries Ago

Horses stamped, steel flashed, and banners fluttered as St. Bernard preached the Second Crusade to a vast throng below the terrace in 1146. Vézelay boys and girls wore these museum costumes more than 800 years later for the Fête of the Virgins of France.

Kodachromes by Melvin Hall

Pilgrims Form Reception Lines Outside Mary Magdalene's Church on Her Feast Day

Medieval folk firmly believed this noble edifice held relics of Mary Magdalene, who saw the crucified and resurrected Christ. Hope of miracles attracted multitudes. These people await a procession.

Picking Burgundy's Grapes. Quips and Laughter Often Ease the Job

Autumn brings wine making, the jolliest season for Vézelay folk. Every member of the family helps gather the harvest. Pickers strip the sun-warmed vines with scissors or knives.

As baskets fill, they are dumped into barrels stained by the grapes of former years (below). Horses (resting all day in the shade) haul empty casks in the morning and full ones at evening. These vineyards in times long past belonged to the Dukes of Burgundy.

Kodachromes by Myron Ball

↑ **Viniculturists Admire the Day's Harvest.** ↓ **Red Wine Gushes from a Mobile Press**

Wine making begins before the harvest ends. White grapes (opposite page) go directly to the presses. Red grapes are crushed and briefly fermented before pressing, so that new wine flows from the *pressoir*.

Below: Booted men turn the press while a helper carries pitchers of young wine. From time to time they stop work to sample their product. For no more than a friendly smile, bystanders can try a sip.

Above: M. Jean-Marie Defert (in straw hat) and his family count their blessings; the crop is good.

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Vézelay Plowmen Distrust Chemical Fertilizers; They Work Rich Brown Land with Oxen and Manure

Alternately berating and cajoling, farmers beg their heavy bullocks to plod a little faster. These men, who love the soil like a mother, carefully turn it three times a year. Most fields are far too small for efficient mechanization.

Traffic Proceeds at Oxcart Pace. M. Dellac's White Beasts Amble Down Main Street with Unthreshed Wheat

Progressive M. Dellac, who has visited Canada, harnesses his bitted Charolais draft oxen with collars, which throw the load onto shoulders, as with horses. Oxen at right wear leather headpieces, which transfer the thrust to horns and necks.

Kodachromes by Melvin Bell

↑ A Cycling Milkmaid Drives Her Cows Through Saint Père sous Vézelay

This 16th-century house stands not far from Vézelay. The squat round tower beside the stable door holds a bread-baking oven. Its roof retains the original stone shingle, but modern pressed tile now covers the main house. Thatch, too, is dying out in Burgundy.

↑ Antique Thresher Groans and Rumbles; Dust and Chaff Fill the Air

The owner hauls his machine from place to place and threshes grain when he is not welding broken parts. Thirst-provoking chaff makes good business for the inn, whose sign offers lodging to horsemen and pedestrians arriving in a hamlet near Vézelay.

encouragement and insult. If they did not, they say, the animals would not know how to work.

All day, from early dawn to late evening, voices drift clearly over the valley. I hear them from my bedroom window, or from the terrace, calling:

"Oh my pretty, let's go! Come now, what's holding you? You've been well fed! . . . That's it, here we go . . . Not so fast! . . . *Oi-ee!* . . . Who sired you, you kind of toad? . . . There we go, my pretty . . . *Oi-ee!* . . ."

Birds, Too, Reap a Harvest

Scores of swallows follow close behind the mowing machines, flying low in graceful curves to catch insects stirred up by the machines. On hot days cicadas drum amidst the creaking of crickets. The noisy cicadas seem to call to the reapers in Provençal dialect: "*Ségo, ségo, ségo*—reap, reap, reap!"

At harvest time an ancient *batteuse*, a highly temperamental threshing machine that breaks down regularly and has to be welded on the spot, is hauled up the town's steep main street (opposite page). There it threshes the grain of Monsieur Soliveau, filling part of the town with thirst-provoking chaff.

While the thresher is being welded during a breakdown, workers slip into a near-by cafe to slake their formidable thirsts with wine. This happens often enough for the time to pass quite jovially for all but the operator-mender of the batteuse.

With autumn come other diversions. People collect walnuts from the numbered trees they rent from the commune. Ardent hunters go out with their dogs in pursuit of rabbit, partridge, and woodcock. Later in the season they hunt deer and wild boar, which used to be plentiful before World War II but now are few.

Autumn's major activity is the *vendange*, gathering the grapes and making wine. This is a jolly season. In villages and along the roads stand barrels red-stained by the grapes of previous years. Two-wheeled carts load barrels and grapepickers and rumble to the vineyards.

Gossip Enlivens a Harvest Party

On slopes facing the southern sun, groups of men and women move slowly between the vine rows, cutting bunches of grapes. Each group deposits its grapes in a basket borne on the back of a youth. When full, baskets are dumped into barrels (page 238). At evening the loaded carts creak home, the pickers tired but merry and full of quips.

I often go out with Monsieur Defert and his party during the vendange. They drive in a cart pulled by a stout mare and a mournful but patient donkey. The men gossip with Rabelaisian indelicacy to one another, to the mare, and to the donkey.

Once arrived at the vineyard, the party works upwards between the rows, one person to each row. Monsieur Defert, being more interested than the others in the state of his vines, may fall a little behind. Then some of the workers are sure to call out in genial banter:

"Isn't the *patron* supposed to set the pace we all should follow? But look at him—he's behind all the rest! Should we slow down?"

Monsieur Defert grins and continues on his course, critically and lovingly regarding his vines while shearing off the bunches of grapes with his short curved knife.

There are various ways of treating the grapes, but usually the red grapes are passed through a mangler, then into a big vat where fermentation starts, after which the mash is pressed and the young wine put in hogsheads to mature. White grapes usually go directly to the press.

The larger viniculturists have their own presses. For the smaller growers there are portable presses set up in the villages. Passers-by are invited to sample the new wine as it trickles from the press (page 239).

Insect Ruined Many Vineyards

Vézelay lies between the districts of the famous vineyards of Burgundy. The wines of my vicinity have no noted names, yet some of the slopes produce a very drinkable "little" wine.

Later the marc, or mash, that remains after the grapes are pressed, is distilled into *eau de vie de marc*, here called *marc de Bourgogne*. There is scant argument over the potency of this beverage. Let the hearty drinker beware of it in volume!

There used to be many more vineyards in this area, but the plant lice phylloxera, which arrived in the 1870's, ruined them. Wars and the enticements of cities have dispersed many of the hands that in days past tended the vines.

Armistice Day is celebrated in Vézelay with a simple but moving ceremony. As a retired United States Air Force officer, I am invited each year by the townspeople to don my uniform and take part in the program.

On the first such occasion after World War II, I received an invitation from the mayor requesting me to attend in my "capacity as representative of the Allied and Associated Nations." In this capacity (quite unofficial, since the title was conferred upon me by the mayor) I placed a wreath on the Monument

Al Taylor

Veiled Against Stings, a Beekeeper Harvests Honey

Bees enjoy a happy hunting ground in Vézelay's flowering countryside. The honey yield is large, its quality good. Smoke from the bellows-fanned smudge pot discourages stinging and facilitates honey taking.

to the Dead and managed inadvertently to contribute something of comic relief to the solemnity of the occasion.

When the mayor learned that I was to get my wreath from Avallon, nine miles away, he remarked pensively, "Oh, then yours will be much bigger than mine!"

A Surprise Floral Necklace

As there is no florist in Vézelay, I had ordered what I thought would be a modest yet appropriate wreath to cost about $3. But the mayor knew whereof he spoke. When I went for the wreath in my jeep, it turned out to be four feet in diameter, beautifully made of freshly cut chrysanthemums. I wondered if I could have purchased a like one for fifteen times that sum in New York or San Francisco.

I returned from Avallon with two passengers, a young artist and a Benedictine monk. With these two in the jeep, we decided to carry the wreath by placing it around the neck and shoulders of the monk. His head, with a black beret, protruded through the center, and his luxuriant, flowing gray beard became entangled in the petals.

Thus we returned to Vézelay, passing up the steep main street under the astonished gaze of the populace. When the mayor saw us he observed in mock gravity:

"I told you your wreath would be far bigger than mine. But I didn't realize you were having a monk built into it!"

The visitor to Vézelay, save on the great fête days, may proceed up the main street to the basilica by automobile, as do most motorists. But a more rewarding view is afforded those who walk from the Place du Barle. Facing the Place are the two principal inns, the Hôtel de la Poste et du Lion d'Or and the Hôtel du Cheval Blanc, both offering comfortable accommodations and excellent food.

On the third Thursday of each month the Place is enlivened by a *foire*, or fair. This used to be of greater importance than it is today. Cattle and horse breeders drove their animals up the hill to be exhibited, and viniculturists offered barrels of wine. Some buyers and sellers still meet at the fair, but usually such transactions are completed on farms and in wine cellars.

Today the fair consists principally of portable booths under canvas, where vendors sell household articles, candies and cookies, knicknacks, shirts, aprons, and fabrics.

Occasionally an itinerant coppersmith welds and re-tins worn-out copper vessels. On some of the fête days there are also a merry-go-round, shooting galleries, swinging wooden boats, and a folding dance hall, which attract the youth of the neighborhood. After the fête these are dismantled, packed onto trailers, and hauled away by trucks in which the owners and operators live, to be set up at another fair somewhere else.

Pigs Voice a Loud Protest

Though cattle seldom come to the fair, stout Ardennais draft mares with their sturdy foals, and many little pigs attend it. The piglets are brought in venerable sedans or vans, mostly fueled by charcoal, or in still more ancient carioles, two- or four-wheeled carts pulled by a donkey or an aged mare.

A Vézelayan Admires One of His Plump Rabbits Destined for the Table

Most families in the hilltop town raise rabbits for food. The skins, sold to itinerant buyers, become children's coats, gloves, and slippers (page 234). With an epicure's eye, this retired farmer envisions the doe as a tasty stew to be washed down with a bottle of good red wine.

Shrill porcine squeals rend the air as the pigs are lifted by the tail and one ear from the jalopies and carts into crates. Then there is bargaining by ruddy-faced men, and some of the piglets change hands and carts, shrieking lustily.

Vaulted Cellars Carved from Granite

Many buildings in Vézelay date from the 12th century; a few have still earlier foundations. In the vicinity of the basilica one observes numerous Romanesque door and window arches, usually blocked up, a few of which show Moorish influence in decoration. Unhappily many of the ancient façades have been mutilated by later modifications.

The spacious cellars of these old houses are a special feature of Vézelayan construction. Dug from the granite escarpment, they have high and graceful vaulting supported by Romanesque columns.

Such *caves* served a triple purpose in medieval times. Primarily they were storehouses for food supplies and wine to carry through periods of siege. But they also held cisterns to trap precious rain water from the roofs, and they provided living quarters for many refugees. All the great cellars were interconnected underground.

One of the best-known buildings in Vézelay is the Maison des Colombs, a very old house done over in the 15th century. It has a fine cellar, and its round-arched windows and door on the ground floor bear inscriptions in Old French and in Latin.

The house is named for a family that owned it in the 15th century, Colombs (or Columbus). Locally it is believed that these people may have been related to Christopher Columbus, since their armorial bearings were similar.

Farther up the street is the house where Louis VII of France resided during Eastertide of 1146. He is the king often credited by historians with first giving France its royal emblem, the fleur-de-lis. Louis, according to legend, chose for his armorial bearings the sword-shaped flowers of the little marsh irises that grow in masses of yellow and pale lavender by the edges of Burgundian streams.

These flowers thereupon took the name of "*fleur de Louis*," in course of time slurred to *fleur de lis*. Though we sometimes read of the "lilies of France," they are really wild irises.

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Al. Taylor

Children Celebrating a Religious Festival Lead a Procession past Walled Gardens

Some of these youngsters have just taken Communion in the Basilica of St. Mary Magdalene. Now they parade in their finery. All carry basketsful of flower petals to strew along the way.

In sheer size alone the Basilique de la Sainte Marie Madeleine is impressive. Four hundred feet long, it has two widely spaced towers which rise above the height of the nave. One forms a part of the façade; the other surmounts the southern transept (page 237).

Externally the lines are plain, almost severe. They are relieved by protruding grotesque heads and a somewhat heavy Gothic window over the outer portals. The window, as well as the upper part of the front tower and the flying buttresses of the nave, were built late in the 12th century, when Gothic style was beginning to replace Romanesque.

It is the interior that makes the basilica one of the glories of religious architecture. Beautifully proportioned, well lighted, and unadorned by statuary, the church has a warmth that few others of its size possess.

The projecting flat round arches supporting the vaulting of the nave, of alternate blocks of brown and white stone, give an astonishing effect. They trace in spirit from such Moslem buildings as the Great Mosque of Córdoba, which one of the Benedictine monastic architects might have visited.

Kings and Commoners Met at the Shrine

Among the finest features of the nave are the historiated Romanesque capitals of the columns and piers. Here one finds the storybook of the Middle Ages. Sculptures in stone on portals, friezes, and capitals portray the history of Old and New Testaments, popular legend, and the recompense of the good and punishment of the wicked.

Below the Gothic choir is the crypt, parts of which date back to the first church. It contains the *châsse*, or reliquary, in which are preserved relics of St. Mary Magdalene.

To this vaulted crypt came many medieval celebrities: St. Bernard; Louis VII and his wife, Eleanor of Aquitaine; Richard the Lionheart of England and Philip Augustus of France, making rendezvous at the start of the Third Crusade; St. Thomas Becket, fleeing the wrath of Henry II; St. Louis of France; and countless others.

Lowly pilgrims by the tens of thousands wept and prayed over relics of the Magdalene for forgiveness of sins. Many of these penitents had taken a vow to make the still greater pilgrimage to Santiago de Compostela, there to pray over the remains of St. James the Greater.

Stretching behind the apse of the basilica, a broad terrace, partly covered by aged chestnut trees, affords a magnificent view. Visitors look down upon the valley of the Cure, 500 feet below, and the ancient village of Saint Père sous Vézelay (page 230). Beyond, the countryside rolls pleasantly to the heights of the Morvan, a land of dales and forests whose clearings are mauve-tinted by heather.

Where Saint Père is now, the gallant and pious Count Girard de Roussillon founded a convent about 860. It was destroyed shortly thereafter by Norman invaders. Undeterred, the Count soon established a Benedictine monastery on the safer site called Vizeliacus, now Vézelay.

Originally there were seven gates to the town, but only one remains intact. This is the Porte Neuve, or New Gate, begun in the 14th century and one of the most splendid examples of its period in France (page 233). It faces the Chemin de Ronde and the old road to Asquins. The former, as its name implies, skirts the walls around the mango-shaped town, where once stood the ancient moat.

There are remnants of three other gates, from one of which a path descends to the Chapelle Sainte Croix, now known as the Cordelle.

A tall wooden cross near the chapel marks the site where St. Bernard preached the Second Crusade, Easter, 1146. His words fired a zealous throng of about 100,000 barons, knights, and squires, led by King Louis VII.

Chapelle Sainte Croix was built between 1146 and 1150 to commemorate the event.

In 1946 a Peace Pilgrimage assembled at the commemorative cross on the 800th anniversary of St. Bernard's sermon. Groups of pious pilgrims, bearing 80-pound oak crosses, came afoot in penitence and humility from many parts of France, England, Belgium, Luxembourg, Austria, and Switzerland, to pray for international peace.

Some of the pilgrims, including the whole Belgian delegation, had marched on bare feet from their homelands. All were barefoot when they climbed to the basilica, where thousands gathered on the fête day of the Magdalene.

The Cross on the Clouds

The pilgrims had spent the previous night on near-by ridgetops, camping around bonfires. The basilica was floodlighted, standing immense in silvered outline on the height of the escarpment, a glowing symbol for the pilgrims keeping vigil with their crosses.

A thin layer of clouds had formed over the valley at about 3,000 feet. Against these clouds the floodlights, playing on the basilica, cast the shadow of a gigantic and perfectly formed cross, dark upon the white background. Pilgrims, huddled by their bonfires, watched in awe until the clouds dispersed and the shadowy cross was gone.

It was a poignant reminder, to those 20th-century penitents, of the glory of Vézelayan history.

W. Robert Moore, National Geographic Staff

A Sudanese Desert Patrol Sweeps Past Khartoum's Memorial to General "Chinese" Gordon

Riders on their swift white camels keep order among desert nomads in the area where General Gordon was killed in 1885. Like Canadian Mounties, the Sudanese have a reputation for always getting their man.

South in the Sudan

Spear-throwing, 6-foot Warriors in Africa's Remote Heartland Have Been Little Changed by Civilization's Slow Advance

By Harry Hoogstraal

THE engines of the little ferry coughed into life, ready to chug us across the smooth green Nile at Juba, far south in Africa's equatorial Sudan.

On deck I was acquainting my young bride with local folk, old friends of mine but new to her. A brown-skinned girl, wearing only a few beads, hoisted an infant on her hip. A stooped, wrinkled crone drew from her goatskin skirt a foot-long pipe and lighted it with burning charcoal held in bare fingers. Beside her a tall black warrior, dressed only in unconcern, leaned indolently on his spear.

Suddenly the turbaned ferry captain gave an agonized scream and clanged a bell. The engines stopped. There was a loud splash.

Watery Introduction to the Nile

We rushed to the offshore side of the ferry, to see a sickening gurgle of bubbles. Deep in the water we could trace the shadowy outline of the truck carrying our baggage! While we had been chatting, our driver had driven the truck aboard, left the brake insecure, and the vehicle had rolled over the side.

Nude natives in narrow dugout canoes soon arrived to race after odd pieces of luggage that bobbed downstream. Hours later, 200 chanting, sweat-gleaming men were tugging on a long line attached to the car.

As we spread soggy clothing over the sun-baked ground, my wife's first quiet sobbing became forced laughter. A bride only a few days away from Chicago on her first trip to Africa, she could little visualize herself wearing yellow cashmere sweaters, white blouses, and tan jodhpurs stained an ugly green from a small artificial Christmas tree she had packed.

I had no drying problems. My baggage had been sucked away by undercurrents, never to reappear. I joked about how much less handsome I would look than the sturdy natives dressed in nothing at all, but I secretly worried about my lost expense money.

We had come to live in south Sudan. Attached to the United States Naval Medical Research Unit located at Cairo, I was to study disease-causing parasites.*

Today's shifting news spotlight has turned on the Sudan, where for the last 54 years Egypt and Great Britain have ruled in a condominium, or joint governorship. But this attention has left even well-informed persons wondering just what and where the Sudan is (map, page 250).

The 967,500 square miles of eastern, central, and northern Africa that comprise the Sudan still remain virtually unknown, off Western civilization's beaten track.

A few American missionaries have worked there. Air travelers, stopping overnight at Khartoum, have spent the evening buying carved ivory animals on the Grand Hotel veranda. Other Americans did wartime service at isolated desert airports on the route across Africa. But most Americans know the Sudan only as a stamp-album country that for 50 years furnished a design portraying a postman astride his camel on a blazing desert.

Egyptians know the Sudan as their southern neighbor, having strong bonds of language, commerce, and religion with this vast area surrounding the life-giving Nile. Formerly parts of it were Egyptian by conquest.

To many Britons, the Sudan is an endless, inhospitable desert where, only three generations ago, the fabulous Gen. Charles George ("Chinese") Gordon was killed in the revolt of the Mahdi, and where Lord Kitchener was victorious in battles against fanatic desert dwellers.

The Briton who works in the Sudan looks upon the country with missionary fervor and feels it his personal obligation to guide it gently on the road to good government.

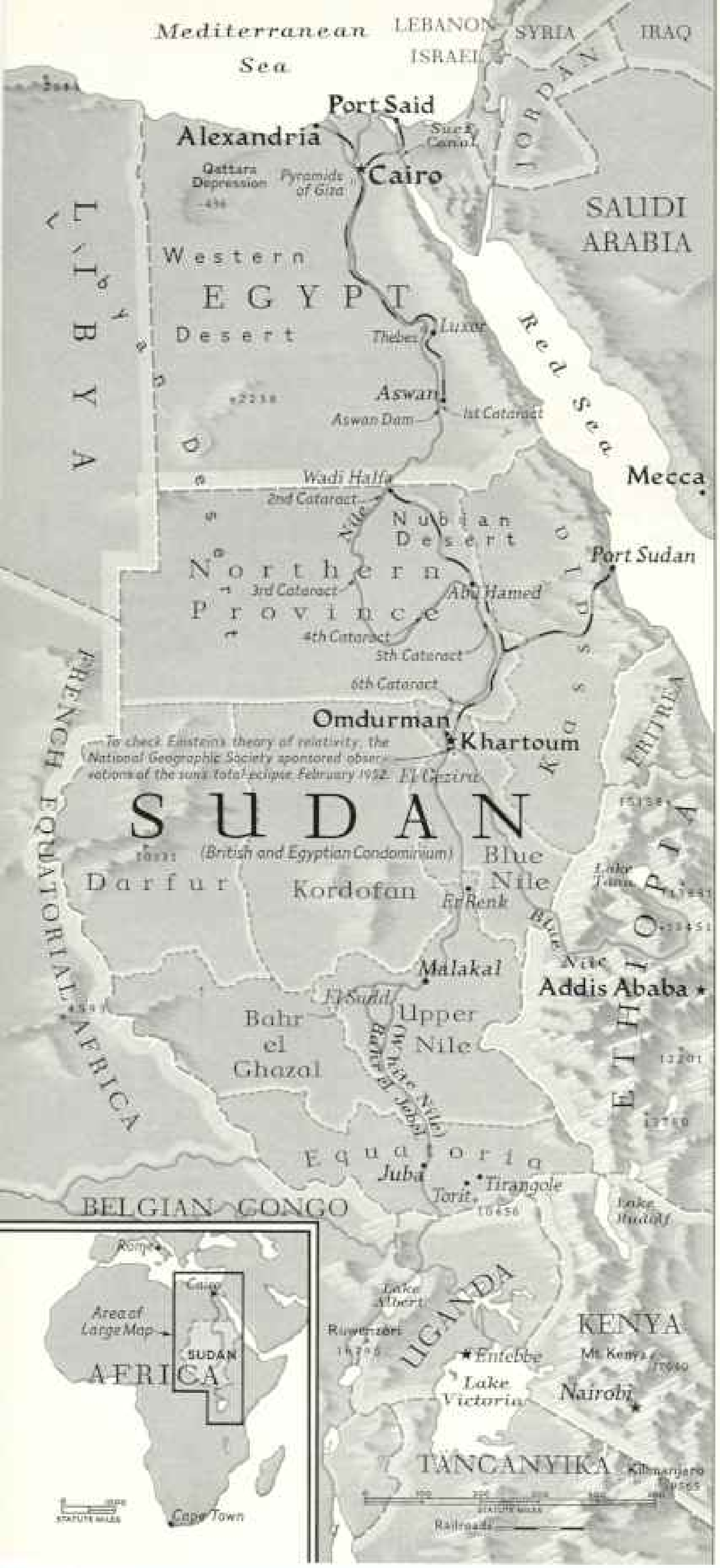
Two Sudans—Desert and Veld

During the past few years it has been my fortunate duty to make several trips to the Sudan prior to the one when my bride received her moist introduction to Juba.

My first visit was in 1948. Traveling the full length of the country as I did, I learned that there really are two Sudans—the vast desert region of the north and the veld and El Sudd of the south. These two parts differ in plants and animals and form two distinct ethnographic and economic areas.

On that trip, our Naval Medical Science Group, consisting of a clinician, parasitologist, zoologist, laboratory technician, photographer, and several assistants, set out from Port Said, Egypt. We drove our jeeps and heavy-duty trucks south through teeming, fertile fields of cotton and sugar bordering the Nile. Beyond Aswan, where roads end, we followed vague

* The author, a zoologist, described another medical research expedition in "Yemen Opens the Door to Progress," in the February, 1952, National Geographic Magazine.



camel tracks across the barren Western Desert.

Days later, rubbish, footprints, and goats shattered the desert's serenity. We had reached bustling, sun-baked Wadi Halfa on the Sudan's northern border.

At the railroad siding, piles of hides, sacked beans and grain, and pens full of cattle awaited export by river steamer to Egypt. Across the tracks, bales of Egyptian manufactured goods lay ready for loading on toylike "goods cars," southward bound.

That day, when blinding hordes of feeble-winged midges emerged from Nile mud, we made our first medical observations. These *nimiti* cause such a severe asthmalike condition among the people that the town of Wadi Halfa may eventually be moved away from the river.

South of Wadi Halfa the Nile loops far to the westward. We cut across the Nubian Desert and came again to the river at Abu Hamed. Following along its bank, we passed

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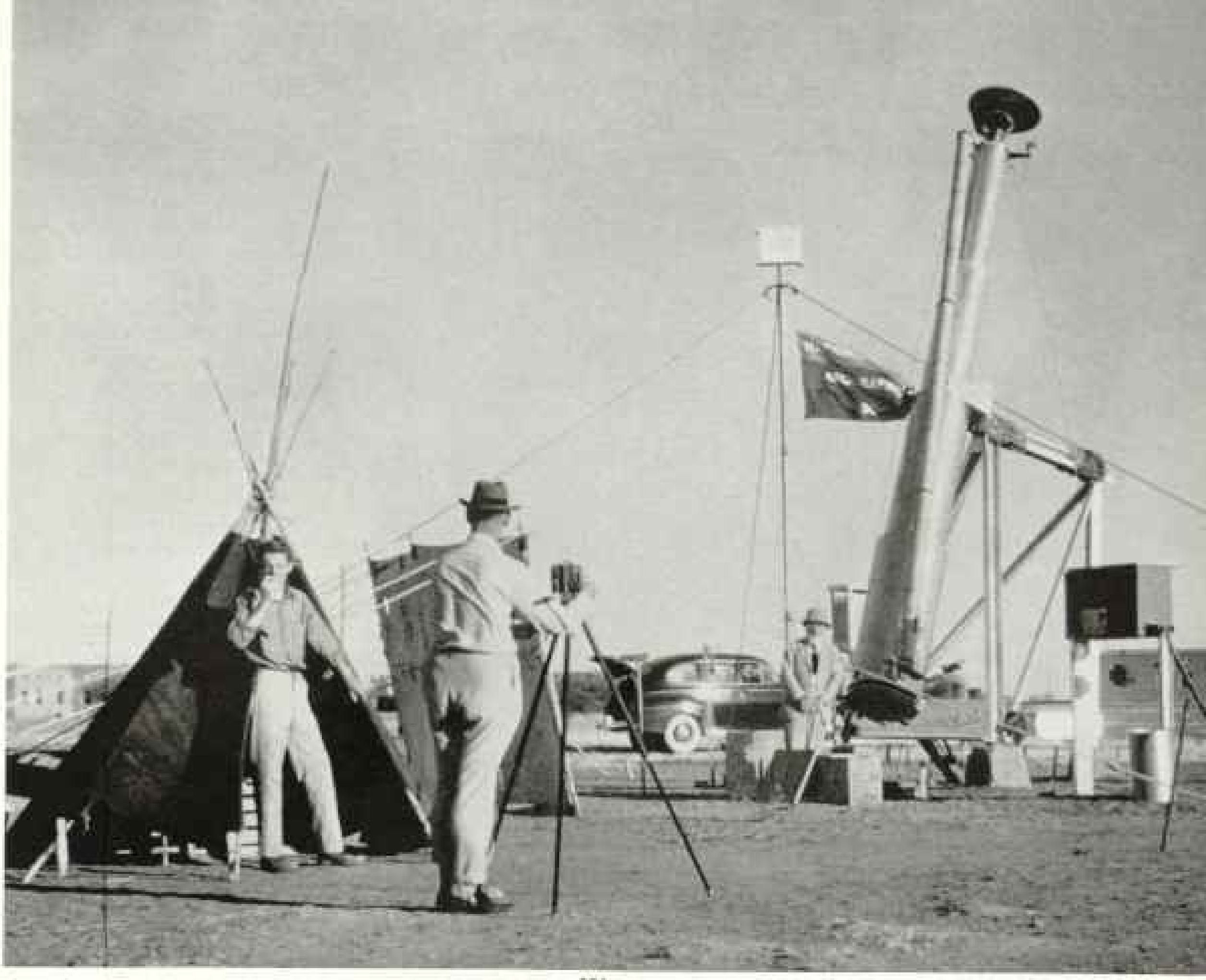
← Sudan Is the Key to Egypt's Ambition for a United Nile

Sudan's million square miles stretch from deserts in the north to wooded grasslands of central Africa.

To Egypt the country means control of the upper Nile and its life-giving waters. Since 1899 Egypt and Great Britain have ruled the area jointly, but Cairo's demands for complete union with the Sudan have produced friction. Last year the two nations began arranging for the first election of an all-Sudanese government. After several years the people are expected to choose their permanent status.

A satisfactory settlement would go far to improve Anglo-Egyptian relations, strained by differences over Suez and the Sudan.

Drawn by Robert Northrop and Victor J. Keller



Indian Tepee and 20-foot Telescope Point Skyward from Africa's Sands

Khartoum, directly in the path of last year's total eclipse, was the mecca of many scientists. The National Geographic Society, the United States Navy, and the United States Air Force cooperated in sending Dr. George Van Biesbroeck of Yerkes Observatory into the desert. There he photographed the sun's blackout as one step in checking the accuracy of Einstein's theory of relativity (page 252). Here the astronomer awaits zero hour. Clockwork in box (right) controls the swing of his telescope. W. Robert Moore of the National Geographic staff adjusts his tripod. The tepee shelters John Ladd.

through crowded, high-walled mud-brick villages, stopping often to drink black coffee with proud, white-gowned Arabs.

On a windy afternoon our dust-blackened party reached Khartoum, capital of the Sudan. We could scarcely see its buildings through the blinding fog of a dust storm (page 255).

Where Blue and White Niles Meet

Next morning the dust was gone; a cool, fresh breeze blew. We walked down the shady riverside road to view Khartoum's finest sight, the junction of the Blue and White Niles.

At times the Blue Nile really is blue. But in summer, when the river is swollen by tropical rains in distant Ethiopia, it becomes a churning, racing torrent where it meets the calmer, seldom fluctuating gray waters of the White Nile.

Needing supplies and repairs, we later drove to Khartoum's "industrial section," booming in postwar prosperity. To us, the boom seemed mild, but here thrive small industries for pottery, carpentry, motor repairs, contracting, soapmaking, printing, and leatherwork.

In modest offices in old high-ceilinged Government buildings we met shirt-sleeved officials who outlined development schemes for desert and grassy plains and planned extensions of health, educational, and agricultural services.

We visited the Kitchener School of Medicine, secondary schools, libraries, and research institutions that are the Sudan's great pride. Operating on flimsy budgets, these units are gradually bringing aid and enlightenment to the people.

Khartoum's shops are stocked with necessities, but few have luxuries. Nowhere in the Sudan does one see ostentatious wealth, except possibly that revealed by a shiny Cadillac convertible of an Armenian merchant or a sedate Rolls-Royce of a Moslem leader.

On one of Khartoum's main thoroughfares, General Gordon sits on a bronze camel (page 248). He stares toward a green park with

C. P. A. Strom and Harry Hoogstraal

Baby in His Calabash Hides from Sun Like a Turtle in Its Shell

Easygoing Lotuka tribesmen inhabit the grasslands of southern Sudan. Disdaining dress and caring little for civilization, they live by their skill as hunters, farmers, and herdsmen. This young Lotuka naps under his gourd awning while mother enjoys a pipe. Lotuka men seldom smoke.

the same steadfastness with which he faced death at the hands of the Mahdi's forces. Near the Palace, the residence of the Governor General, Gordon's victorious successor, Lord Kitchener—proud, upright, never knowing defeat—sits on an Arab horse.

Khartoum, 1952 Eclipse Site

Around the Blue Nile's bend, a scant 20 minutes by automobile from Khartoum's center, is bustling Omdurman. There, in 1898, Kitchener fought his raging battle against sword-waving "Fuzzy-Wuzzies."

Now 125,300 people dwell in this busy mud-brick city. Commerce, native industry, and tourist curios support them. Ivory carvers fashion gleaming miniatures of Sudan's big game animals; gold- and silversmiths copy age-old Arabic designs. In the crowded market place, city dwellers and wide-eyed desert roamers quietly and earnestly bargain. Nowhere else in the Arab world have we seen marketing so hushed.

Early in 1952 I was fortunate enough to return to Khartoum when Nature put on one of her grandest spectacles—a total eclipse of the sun. Several days before "E Day," February 25, the Government radio had warned the natives against hurting their eyes by staring directly at the sun before totality. The warning was misunderstood, with the result that at the crucial moment the Arabs locked up their women and children in the dark lest they be harmed by the eclipse.

Some threescore scientists from 10 different nations set up observation stations about the town. The National Geographic Society, with the cooperation of the U. S. Navy and the U.S. Air Force, sent Dr. George Van Biesbroeck of Yerkes Observatory to continue his studies on the accuracy of Einstein's theory of relativity. We laughingly referred to Dr. "Van B." as the professor who would grade Einstein's arithmetic paper (page 251).

Einstein had shown that proof of his theory would be the bending of light rays from distant stars as they passed the sun, this "shifting" by an extremely small fraction of a degree being caused by the sun's gravitational pull.

To study this, Dr. Van Biesbroeck photographed stars in the sun's field during eclipse. Then, returning to Khartoum six months later, he photographed the same stars at night when the sun would not bend their light rays. Comparison showed an average shift of 1.70 seconds of arc, plus or minus .10 for possible error. Einstein's prediction of 1.75 thus falls within the range of these results.

Two years earlier Dr. Van Biesbroeck had surveyed the locale. In 1952, Khartoumites easily recognized the dignified, white-bearded astronomer. Some of them pointed him out as

the professor who had come to see the spectacle two years too early!

Southward from Khartoum across semi-desert is El Gezira, where in a single rich Government-managed, million-acre irrigation area grows some of the world's finest long-staple cotton. It produces a large part of the revenue available to develop and administer the Sudan with its more than 8,000,000 people.

Wild Beasts and Bush Hazards

Until my wife and I reached Er Renk we had seen only the Arabic people in long white robes and tightly wound turbans. At this way stop we came upon two naked, lean, extremely tall Negroes carrying great piles of brushwood on their heads. These two Nilotics were the first of thousands of smiling natives among whom we were to live.

For the next 675 miles dirt tracks led through wooded grasslands. Giraffes eyed us curiously; herds of zebra raced away; hippos grunted in the river, and flocks of storks flew overhead. Lions roared near night camps as we roasted guinea fowl and partridge we had shot. Hordes of mosquitoes tortured us.

In little bush hospitals in this area we saw the first cases of the tropical diseases we had come to study. But what intrigued us most were cases in the accident wards—men stepped on by elephants, gored by buffaloes, and clawed by lions and leopards!

At last we came to Juba, on the White Nile (Bahr el Jebel). At this important river outpost we temporarily halted our march.

On this longitudinal journey we had seen how Nature provides the Sudan with little more than the wherewithal for meager living. In northern deserts, nomadic tribes eke out a precarious livelihood as they drive herds from one grazing ground to another.

In central Sudan rain is so uncertain that most tribes alternately cultivate fields and wander with their animals. Scattered wild thorn trees in the region yield resin, known to commerce as gum arabic. Used in adhesives, medicines, and candies, gum arabic is the Sudan's largest export in value next to cotton and cottonseed.

Irrigation produces valuable crops, especially cotton. But all irrigation water allotted to Sudan under the Nile Waters Agreement of 1929 (which regulates water use to ensure an adequate supply for Egypt's vital agricultural economy) is being used or developed. Until Egypt's needs are fulfilled, the Sudan may have no more.

In the south, rain is erratic and too poorly distributed for raising most cash crops. Torrid heat, disease-ridden plains, and isolation contribute to backwardness. The huge area and great distance from world markets make transportation costs high.

Even the Nile waterway bisecting the Sudan is treacherous. Cataracts, logs, floating islands of vegetation, or *sudd* (mostly papyrus), and sand bars obstruct it. Narrow channels frequently silt up and change their courses. Only shallow-draft paddle-wheel steamers navigate the river here. Accidents are frequent.

Extensive exploration has revealed no oil and almost no commercially profitable mineral deposits.

While the more articulate northern Sudanese are becoming increasingly anxious to develop their inhospitable land, the 2,500,000 sturdy Negroes of the south live content with their primitive way of life.

Our extended research brought us into daily contact with these happy-go-lucky southerners. Half a mile from one of their villages we built thatch-covered mud huts and arranged our microscopes to study blood and parasites.

Scientists Figure in Native Fun

We learned local folklore from helpers who skinned specimen animals. Around campfires these boys sang chants and humorous extemporaneous ditties. In their clever pantomimes we sometimes figured as conquering heroes and at other times as bedraggled hunters of fleas.

Few outsiders have had intimate acquaintance with southern Sudanese tribes. Aside from missionaries, only two or three have left their mark among these people.

One was an English-born ecologist from New Zealand, Dr. John Golding Myers, who had a D.Sc. from Harvard. Before he was killed in a road accident in 1942, he assiduously explored agricultural possibilities of southernmost Equatoria Province. He left behind him extensive findings on soils, crops, and natural vegetation.

Another, best unnamed, was an American ivory poacher. Shortly after the century's turn he caused so much havoc that an expeditionary force was sent against him. The report read: "Accidentally shot while trying singlehandedly to disarm pursuers."

We set up camp in Torit district, almost 100 miles east of the Nile and about the same distance north of Uganda.

Our Torit neighbors belonged to the Lotuka tribe. One of many in the Nilo-Hamitic group of southern Sudan, these people are tall, lanky, and have ebony-black bodies. Skilled hunters, they are disinterested in civilization.

The Lotuka joke about everything they hear and see. Transferred to an American Sunday-night radio program, their constant witty patter about everyday sights and activities would make them famous. They could

Skimming Like a Dragonfly, a Helicopter Spreads Deadly Fog Across Sudan Cotton

Much of Sudan's revenue comes from immense Government-managed plantations producing a fine long-staple cotton. DDT spraying helps control a leafhopper-borne disease which often ravages the crop.

hardly appear on television, however, for these self-reliant Nilotics disdain dress.

Here in the Sudan most visitors accept the natives' nakedness as normal.

Exceptions were two stately English ladies who once landed at Juba airport en route south. Just as they reached the hotel veranda for afternoon tea, they saw a 6-foot man, dressed only in tennis shoes, ambling down the path. The good ladies shrieked, ran to their rooms, and were not seen again until the plane was ready to depart next morning.

I knew a former Torit police sergeant who for 20 years wore an immaculate, stiffly starched uniform befitting his high, responsible office. But since the day he retired, he has not donned a stitch of clothing.

Christian converts wear clothes, but even they frequently discard dress in their own villages.

Lotuka have their own strict concepts of modesty. To them, kissing is immoral.

Unmarried Lotuka girls wander about the village completely unadorned or wearing only a meager row of watch chains dangling from a narrow beaded belt. Tribal law forbids men's touching these "iron curtains." Transgressors pay fines of goats. Aft, the girl wears a bandanna-size cloth woven from fine grass and resembling crochet work.

Married women replace chains and cloth with goatskin skirts.

Skin Scars and Scalloped Ears

Skin scarification beautifies the wearer by community standards. I shuddered as I watched operations to acquire these beauty marks, but the patients only winced. Each sat on the ground before a beautician armed with a sharp curved pin and a rusty razor blade. With deft movements the operator jabbed the pin into the skin, pulled it to a point, and sliced off the tip. Soon both persons were dripping with blood. When the design was complete, oily ocher was rubbed over the cuts to cause beading and to serve as a questionable antiseptic.

Lotuka skin scars originally denoted age group, clan, or number and sex of enemies killed. Now individual imagination governs designs. Women usually prefer raised dots,

Black Star

A Dreaded *Haboob* Rolling In from the Desert Envelops Khartoum in Sand

This gritty storm calls to mind the "black rollers" that swept America's Dust Bowl of the 1930's. A haboob blowing up four days before Khartoum's eclipse threatened to negate months of scientific preparation.

straight lines, or geometric patterns over the body (page 257). Men wear a star on the cheeks, bars or rows on the body, a fish or antelope design on the chest.

Further beautifying is painfully gained by scalloping the edges of the ears. Many women have a hole punctured just beneath the lower lip in which they wear a stick or an empty cartridge case.

Men frequently cover their bodies with fine, white wood ashes and appear like ghostly apparitions, except as friends may draw geometric designs in the white coating. Sticky, bright-red ocher, daubed on the skin, is the fanciest local cosmetic.

Laundry Bluing Tints Men's Skins

At a recent hunting dance I was surprised to see men dyed bright blue from neck to knees (page 264). This new vogue, John Owen, the district commissioner, explained, was due to the village entrepreneur, who, despairing of selling laundry bluing for the usual purpose, was promoting it as a skin beautifier.

Everyone wears a giraffe-hair neckband with an ingenious sliding loop for passing it over the head. Even non-Christians hang shiny religious medals or large gleaming crosses from these bands.

Our stock of safety pins and cotter pins was quickly depleted as gifts to be placed in hair, ear lobes, or lip holes. Our gasoline tins and cartridge shells were hammered into other ornaments. And the shiny tinsel which my wife originally had intended as decoration for her water-ruined Christmas tree became gay bits of adornment.

Lotuka are paragons of courtesy to people whom they know and respect. They shake hands, bow heads, and gravely repeat the word *mong* dozens of times. The friend responds with *ogolo*. To outsiders such lengthy salutations are amusing, except when one is in a hurry to get information.

Most Lotuka villages cling picturesquely to small hills dotting flat grasslands. The inherent desire for this scant protection from enemies is so strong that even now, with little fear of raids, inhabitants refuse to move. In the dry season many women walk 10 miles daily to muddy holes or creeks for water.

George Rodger, Magnum

Happy Warrior Flashes a Toothpaste-ad Smile

A Lotuka spearman, decked for a hunting dance, decorates his brass helmet with crane quills and ostrich feathers. He hangs a missionary medal above tribal scars. Lotuka men rub their teeth with wood to keep them shining.

Villages consist of closely grouped, circular mud huts, each within a stockade to protect families and goats from wild animals. High, conical grass roofs over thick mud walls keep their houses, or *tukls*, cool.

When we visited one, we crawled on hands and knees into the dark, carefully swept spacious room with hard mud floor. Sleeping mats were rolled upright against the wall, spears and shields beside them. From pegs hung a horn, fish nets, and axes. Huge clay pots contained beer and water. On an overhead rack were neat stacks of drying grain.

Hole in the Ground Makes a Cookstove

Outside, beside the entrance, on a flat cemented floor made from sticky mud of termite mounds, fermented millet was drying before being resoaked to produce native beer. Near by, a shelter of branches shaded the fire in a little hole over which all cooking is done.

Although Nature supplies materials for building huts, quality, scarcity, season, and labor must be considered. We built a dozen tukls for laboratories, storage, and quarters for helpers and were surprised at huge costs (even with cheap labor) and the difficulty of obtaining proper materials. Our gangs of men searched miles of grasslands to find enough straight, hard, termite-resistant poles for 6-foot-high tukl walls. Bamboo for roof framework was brought from distant hills.

The rains regulate the annual cycle of events in a Lotuka village. Wet summer months are devoted to agriculture, dry winter months to hunting.

Rain Maker Uses Magic Stones

The rain maker, or *koba*, is one of the community's most important persons. In April or early May he "makes rain" with special rain stones and announces the beginning of the planting season.

Though his performance usually is secret, I once had the chance to see a rain maker in action. After much deliberation, he allowed me to enter the sacrosanct stockade where pots containing the sacred *naphanga* stones were kept, explaining that the sight of the stones would make most persons go blind.

I watched as a tiny emaciated helper removed a heavy flat stone from the narrow entrance and crawled into the stockade. He brought out seven pots and reverently withdrew 13 smooth, elongated, shiny quartz and black stones dripping with water and grain.

One pot held only a single stone. When I asked why, the rain maker explained that the fourteenth had magically climbed from its resting place and escaped.

After the assistant had sacrificed a black goat, the rain maker drank some beer and mixed more with contents of the goat's intestines. Then he and his assistant spat into the beer, added soil, and threw this over the rain stones. Rain making ended by mumbling sacred words.

Seasonal rains seldom failed to follow.

Early in the growing season food is scarce. Improvident tribesmen have consumed most of last year's grain as beer or gruel. Game, plentiful during the dry season, scatters far

and wide and becomes hidden by tall grass.

A quick-ripening durra, or millet, is planted early to shorten this hungry season. On other plots a variety maturing more slowly produces heavier yields.

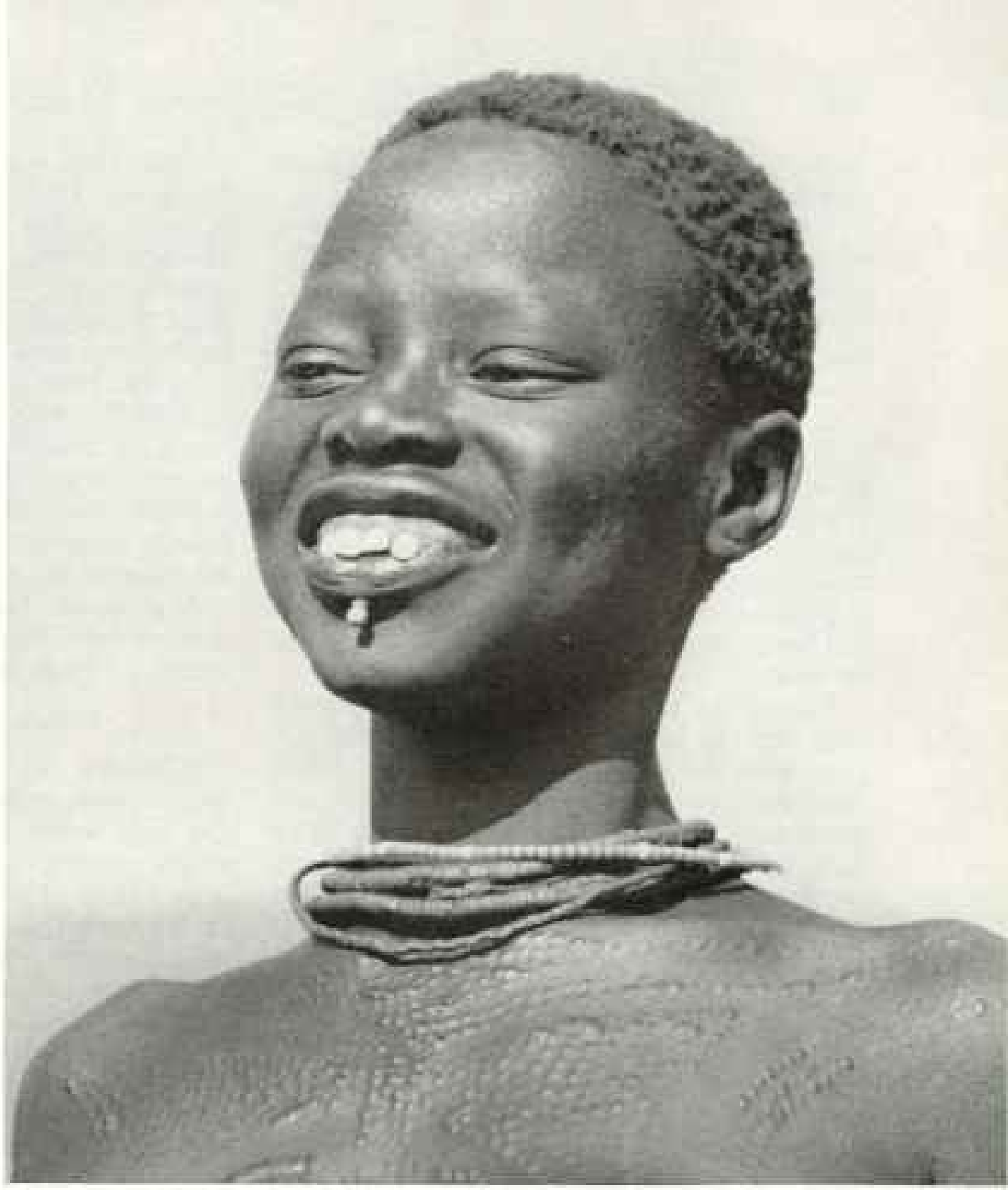
We never developed a liking for the Lotuka staple, a soupy millet porridge usually flavored with sauces. Their low-alcoholic foamy beer, or *marisa*, for which much of the durra crop is used, tasted like a cheap imitation of ours.

Corn, or maize, grows poorly because many nights are warm and rains too irregular for good yields. Peanuts, however, thrive and provide welcome food before grains ripen. Called *jul sudani*, the peanut offers possibilities for commercial development.

My wife's first attempt at cooking in Torit was preparing peanut soup. We have had it at least once a week ever since.

The sesame plant, or simsim *(Sesamum orientale)* provides a cooking oil, a food base, and a sticky binding for the red ocher the people smear on their bodies. Castor beans growing about the village yield a substance for treating women's goatskin skirts. Sweet potatoes have been introduced by Italian missionaries. A little tobacco is planted to fill women's pipes; men seldom smoke (page 252).

Cotton growing, forced on the Lotuka before World War II, resulted in only meager yields. Money had little appeal, and cash crops, to them, meant only useless work. Now the carefully regulated growing of rainland cotton is slowly being reintroduced.



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Fashion in Lotukaland Demands Lip Plugs and Scars

Scarification, produced by rubbing ocher into wounds, once identified age group and clan or recorded the number of enemies slain. Today's scars are decorative. Many Lotuka women wear sticks or cartridge shells in lips.

Termites a Native Delicacy

Rains bring flying hordes of fat, winged termites, much relished by the natives. Lured by flames and caught in pits specially dug to collect them, these insects are eaten raw or roasted. Even some Britishers serve this delicacy, roasted, with sundown drinks.

We were amused by another method of termite capture. Women would pour water into the passages of termite mounds and beat an imitation raindrop patter on the towers. Thousands of deluded insects would issue forth and be gathered in baskets (page 268).

Most Lotuka have large herds of goats and a few sheep. When hunger or ceremony demands, a few animals may be eaten. But flocks are preferably left to breed, for they provide families with their chief wealth.

Since early times many Nilotic tribes have been cattlemen, counting wealth in terms of great-horned Zebu cattle (pages 262, 263). Other tribes live in grasslands dotted by scrub trees, where tsetse flies, carrying trypanosomiasis, restrict cattle raising.

The diet of some neighboring cattle-owning tribes consists largely of milk and blood. A gourd of blood is obtained by cleanly piercing an animal's jugular vein each fortnight. The puncture is stopped with clay, and animals go off none the worse for the bloodletting. The Lotuka, however, consider this practice disgusting and resort to it only during famines.

Weaverbirds are a great economic problem in the Sudan. Often we saw millions of them blackening the sky as they wheeled in close

flocks. They feed on the durra seeds and can completely ruin acres of crops.

To control these voracious pests, farmers, armed with piles of soft mud, sit on tall platforms overlooking their fields. Whenever a flock approaches, the watcher lets fly a mud ball from the end of a twanging stick.

Natives Busiest in Dry Season

In November, as rains diminish, the tempo of village activity increases. Grain is harvested; grass and building materials are sought over a wide area. Straw-colored roofs replace musty, silvery-black ones. Young men hasten to prepare regalia for the months when drums will beat. New spears are made and sharpened for hunts.

This is the season, too, when great smoke palls rim the horizon. Natives burn the tall grass from the plains, so that the land is left clear for new grass shoots to grow. Long worried by destruction caused by these grass fires, the Government has decreed that firing be done only on small areas, early in the season before vegetation has become dry.

In December or January, the rain maker again studies the stones to determine the propitious day for the first hunting dance.

Before the new year dance, men stage a ceremonial foray called *netaðiji*, or "open time for bloodshed." The first trophy presented to the rain maker indicates the season's fortunes. A female animal foretells good luck. If it is a male, the rain maker must appease the supernatural to ensure future success.

I accompanied the men on one of these forays. Hunters had smeared themselves with ashes, and each carried several long spears. As they neared their assembly place a mile away, they raced forward brandishing spears and shouting their own nicknames. Still running, they passed a small fire and dipped spearheads into it to impart bravery.

Next they sat down to sharpen spear points on smooth rocks or tightened loose spearheads by holding them over the fire to melt gummy resins binding the heads to the shafts.

Game Bag—a Tortoise, Two Ticks

At last, enthusiasm at fever pitch, the men stalked single file into the brush, their spears held high, to form a huge human circle around their hoped-for quarry.

On that first hunt of the season almost all game escaped because of unusually late rains and high grass. Only a hard-shell tortoise was caught, but its eggs betokened better luck to follow. A more immediate bonanza to the finder was my reward of three silver coins for a pair of huge, rare, coppery ticks from the reptile's neck. Having no pockets, the man cached the coins in his ear.

Often there is real excitement in these hunts, for many kinds of African game may be cornered within these human traps—leaping gazelles; stealthy, snarling lions and leopards seeking cover; jackals, hares, and wart hogs running aimlessly; galloping, stiff-legged giraffes; or savage buffaloes and rhinoceroses.

In the face of danger, group discipline is surprisingly well maintained. Magnificently brave techniques lessen danger when evil-tempered buffaloes charge. A cornered Lotuka will fall prone before his maddened, onrushing enemy, knowing that the buffalo cannot swing his massive horns near the ground.

A prostrate hunter who thrusts his spear upward into the advancing beast's neck becomes a village hero.

Feasts of Elephant Meat

Whenever we saw long lines of sweating men, women, and children burdened with gasoline tins, sacks, pots, or baskets and racing madly down a trail, we knew an elephant had been killed. Usually by the time we reached the kill hundreds of screaming, arguing, blood-soaked people were already tearing at every bit of flesh and bone.

A few white men with cast-iron digestive systems eat elephant meat. Epicures say only the trunk is palatable. When fats were scarce after the war, however, friends provided us with excellent clear lard made from elephants' feet.

The Game Department estimates that about 17,600 elephants roam the Sudan. Of about 9,600 in Equatoria Province, 2,500 inhabit Torit district. Nearly 1,300 elephants are killed annually, but the rate of increase is believed to be about seven percent. Cow elephants outnumber bulls four to one. By law, females may be killed only when they are destructive.

Elephants with tusks weighing less than 15 pounds may not be killed; a 50-pound tusk is considered good. Some reaching 90 pounds and a very few over 100 pounds appear each year (page 266).

Frequently old big-tusked males boldly raid cultivated land in the dark of night and destroy entire crops. Before dawn they have traveled many miles from their crime. We sometimes picked up weeping owners rushing into district headquarters to report depredations so that game scouts could be sent out to find the robber and dispatch him.

An elephant tail, proudly presented and proudly received, was given to my wife one Christmas as a token of esteem.

Though Lotuka have no fear of big game, some small animals cause them to quaver with fright. They brought us puffing, harmless chameleons at the end of long forked or

Kodachrome by W. Robert Moore, National Geographic Staff

Smothered with Firewood, a Sudanese Felucca Anchors in the Blue Nile Outside Khartoum

Sailors scurry up the lateen sail's long yard to furl canvas. Their cargo will fetch a good price in desert-encircled Khartoum, where wood is scarce. Blue Nile and White Nile join near Omdurman in the distance.

↑ **Servants Bargain for Masters' Tables in Khartoum Market**

Khartoum, capital of Sudan, used to be a bustling slave mart. Its strategic location near the junction of the two Niles makes it a rail and air center today as well as an important market. Its name, meaning "elephant's trunk," refers to a promontory where the rivers meet.

Khartoum gained the world's attention in 1885 when Sudanese led by the Mahdi, a Moslem messiah, captured the city and killed General "Chinese" Gordon, the British commander. Lord Kitchener, heading an expeditionary force in 1898, utterly destroyed the Mahdists' power by overwhelming the Fuzzy-Wuzzies near Omdurman. Kitchener, rebuilding the city, laid out the new Khartoum in patterns like the Union Jack.

Nile water lifted by primitive water wheels turns the city into an oasis. Riverside gardens produced these vegetables.

← Ivory, silver, and leather shops flourish in Omdurman. These workers fashion belts and bags of leather.

A Walking 5-&-10 Peddles European Trinkets in Omdurman

Westernized Khartoum's native counterpart is Omdurman, a melting pot of 125,000 Arabs, Negroes, and others. The city has been called the "dormitory for Sudanese who work in Khartoum."

Omdurman's huge bazaars exhibit a cross section of the peoples and products of central Africa. Here nomad tribesmen sell their goats, camels, and cattle. Traders dispose of ivory, ostrich feathers, and gum arabic from Darfur and Kordofan. Hawkers love to haggle over prices, but, contrary to the custom of their kind, they do it quietly.

This trader sells bandannas, padlocks, pins, soap, needles, and brushes.

An orange vendor does business outside Khartoum's largest mosque. Forming a part of the Arab world, northern Sudan clings to Islam.

A sidewalk merchant polishes his store of ablution jars, which worshipers use to dip up water before entering a mosque.

Kodachromes by W. Robert Moore,
National Geographic Staff

↑ **Zebu Cattle at Torit Carry Black Vertical Brands on Humps to Show Inoculation Against Tsetse-borne Disease**

Tsetse flies make much of Africa's grazing land useless; they carry trypanosomiasis, a cattle scourge similar to sleeping sickness. Antrycide, a new drug, provides some control by giving temporary protection to cattle moving through tsetse areas. The Government offers free antrycide to convince tribesmen of its usefulness and increase the Sudan's food supply. These healthy cattle were rounded up for protective shots. A veterinary inspector (right) supervises his Sudanese staff working in the shade of an ebony tree (center, left).

↓ Cattle pass through a branding chute bound with metal straps from shipping cases.

Kodachromes by C. P. A. Strome and Harry Hoogstraal

▲ Lotuka Warriors in a Hunting Dance at Torit Proclaim Their Bravery with Brandished Spears and Defiant Screams

Most Lotuka go unclothed save for such effects as laundry bluing (left) and bell and specks of wood ashes (second from left). One dancer wears a wrap-around to show he is a Government employee. Most spears carry no heads lest frenzied tribesmen injure one another. Ivory rings decorate arms. Helmets and sometimes breastplates come from hammered cartridge shells saved over the years.

▼ Girls of the Kuku tribe, neighbors of the Lotuka, grind sesame and millet on boulders. Single girls wear leaves; married women, skirts.

Kodachromes by C. P. A. Bronne and Harry Hoogstraal

A Tame Ostrich Ignores Hunters, as if Knowing that the Law Protects Him

Uniformed officers of the Sudan Defence Force have just shot a hartebeest for their troops' Christmas dinner. Here the author (in blue shirt) inspects the carcass for ticks to aid his medical research. Hitchhiking Lotuka wait for a lift to near-by Torit.

Sudan restricts the killing of wild ostriches. Village pets provide plumes for dancers.

Prize Tusks Promise a Rich Reward

Sudan protects its 17,000-odd elephants by restricting the kill and prohibiting elephant pits. Hunters today rarely get tusks much larger than these 90-pounders, which will bring about $100 each.

The elephant control officer stamps all legal ivory before it is sold. Torit porters wear baubles in scalloped ears.

Kodachromes by C. P. A. Strome and Harry Hoogstraal

noosed sticks. If a chameleon was touched, they said, syphilis or leprosy would result.

They brought snakes limply hanging from long sticks. Among these catches were innocuous tiny black burrowers and thin, bright-green grass dwellers; also dangerous vipers, cobras, boomslangs, 12-foot mambas, and ugly, bloated adders.

The Lotuka's knowledge of large and small animals about him greatly aided our parasitological research. We organized gangs of boys with clever nooses to trap 6-ounce snout-nosed elephant shrews which harbored a peculiar malaria we had come so far to study.

We wanted to know its relation to human malaria, the host's adaptability to laboratory cages, and its potential value for research on human malaria. We found that the elephant shrew malaria parasite has a quite different life cycle from the one which causes human malaria. It is still being studied at the Naval Medical Center, Bethesda, Maryland.

Lotuka hunting knowledge also aided us in finding rodents and other animals harboring other diseases; also ticks, fleas, and lice which we wished to study for their relation to human disease.

Lotuka Women Catch Catfish

Fishing is female sport. Early on dry-season mornings hundreds of net-encumbered, chattering women used to trek past our house to the near-by river. Older women, holding nets, knelt in the water at a narrow turn to form a human barricade. Girls raced a mile upstream, then plunged into the water and, with arms and legs flailing, moved downstream toward their waiting elders.

When excited girls and garrulous matrons met, blackened waters churned with long-whiskered catfish. The women scooped them up in nets and carried them home.

We never tired of watching the dances that are the Lotuka's favorite entertainment. For days beer-tippling mobs danced to wildly booming drums, tooting whistles, and low-voiced foghorn trumpets. Celebrations became marathons of sweat-soaked excitement, though specific dance patterns were vague.

High-stepping, spear-toting, roaring men, ranged in age groups, pranced around the village central circle. In front, facing them, nimble-footed, loose-hipped women swayed, urging the men onward.

On the side lines, village maidens more decorously went through intricate steps and body movements. They moved with downcast eyes, but even six-year-olds sensed every youth's admiring glance. They danced silently, expertly, ceaselessly, hour after hour.

In the throng's center, beside sacred upright drum poles, special drummers beat their club's chosen tunes. Should a rival club attempt to steal another's tune, a frenzied stick fight follows. Individual drums are highly esteemed; some even have names.

The most powerful drummer we knew was Lomiluk of Tirangole, chief and rain maker of the little-tamed Lotuka of the plains. He could beat his chest-high drum all day and night with flattened hands. Women, breaking through the entranced multitude around him, wiped his sweating brow and chest. Shrilly luluing his praise, they sprinkled him with beer and grain to symbolize his life-giving rain-making powers.

Except for decorating themselves with red ocher or white flour paste, the women wear no extra dance costume beyond everyday iron chains or goatskins.

A heavy peaked mud hat, overlaid with brass plates, is the most important item of men's regalia (page 264). White ostrich plumes, black ostrich pompons, and empty cartridge shells adorn the hat's peak. Atop this waves a long wand decorated with little red and black feathers.

Each man boasts ivory or wart-hog tusk arm bands. He carries a narrow white buffalo-hide shield bedecked with black ostrich pompons. Some also hold little brass tomahawks.

In his other hand the dancer bears a long, thin, untipped spear shaft ringed with brass bands. Hair tufts from dangerous animals tied to the shaft attest the hunter's bravery.

Another dance costume consists of a cattle-horn trumpet suspended on a chain from the neck, strings of jingling bells, a leopard skin tied casually over the shoulders, or a black-and-white colobus monkey skin around the waist. Wealthy individuals wear heavy wide brass neckbands or large brass plate pendants on their chests. Rarely, conch-shell bands are worn across the cheeks; these show influence from "foreign" tribes.

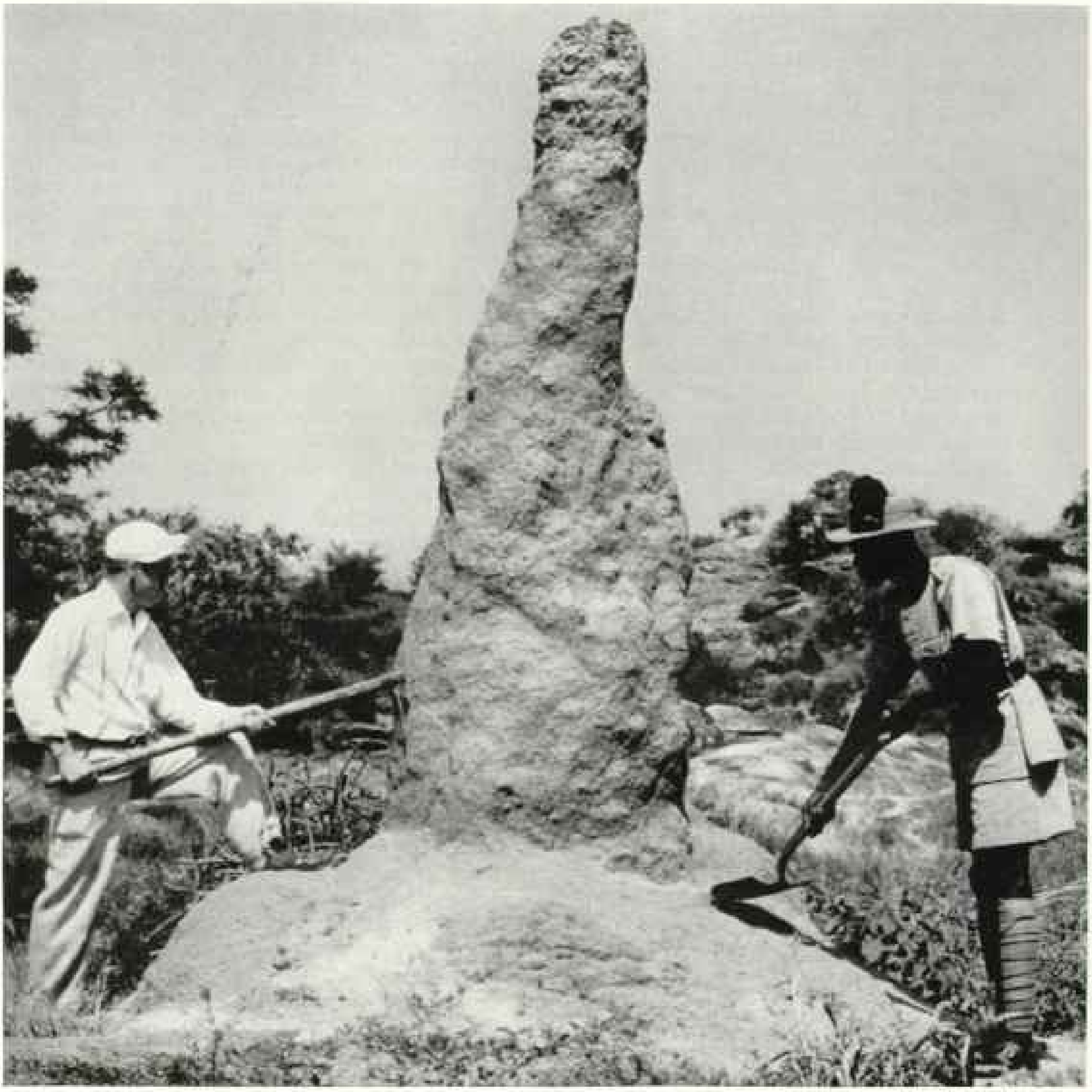
Hollum, "Creator of People"

Dances opening the hunting season and the planting season are the year's liveliest. While grain is in the bloom, drums are silent. Only quiet dances mark deaths or other ceremonies.

The Lotuka religion is a simple one. Missionaries have implanted the idea that God creates people and governs their lives. Now Christians and most pagans alike accept this belief in one form or another.

God, called *Hollum*, formerly meant "creator of people." Early European priests could discover little about Hollum, but because they heard the name always reverently pronounced, they referred to the Christian Deity by the same name.

The people also speak of a vague spirit called *ajok*, which may be either good or bad.



Harry Hoogstraal

A Monument to Hard Work: African Termites Raised This Towering Clay Nest

Swarms of nocturnal "white ants" build massive nests of mud mixed with sticky saliva. In galleries deep underground they grow fungus for food. Heat from the fungus gardens sometimes rises in waves from ventilating shafts in the mound's chimney. These men demonstrate that the clay is cement-hard.

An ill person, they say, is captured by ajok.

They believe that, at death, a human simply assumes the form of his clan animal, an elephant, termite, monkey, crocodile, or snake.

Despite the Lotuka's high regard for free Government medical service, the village doctor, or *amuroni*, does a thriving business. The amuroni of Torit village was a keen-faced, wizened old woman with bright, alert eyes. An equally decrepit, watchful sister who assisted in the ministrations shared in the "clinic's" proceeds.

Once when we went to visit them, a girl arrived complaining of an abdominal pain. The sisters had her stretch out beside their hut. Then the chief amuroni filled a calabash with water and threw in a little debris. Mumbling to herself, she slowly revolved the gourd over the girl's abdomen. After a minute she withdrew the calabash and quickly examined it. With a convulsive movement she threw the contents into a little hole by her side and wiped the container dry to remove whatever contamination had seeped in.

After thrice repeating the performance, she pulled a twig from the debris in the water,

announced it to be the parasite that had caused the pain, and dashed it into the hole with a scornful oath. With that the patient was pronounced cured.

Brides Cost 100 Goats, 10 Cattle

About the time a Lotuka youth is initiated into the rank of warrior, he elopes with the girl of his choice. When the girl's parents find them on the morning following their escape, she has replaced her iron-chain apron with a goatskin skirt. The young man arranges to pay her father the bride price of 100 goats and 10 cattle.

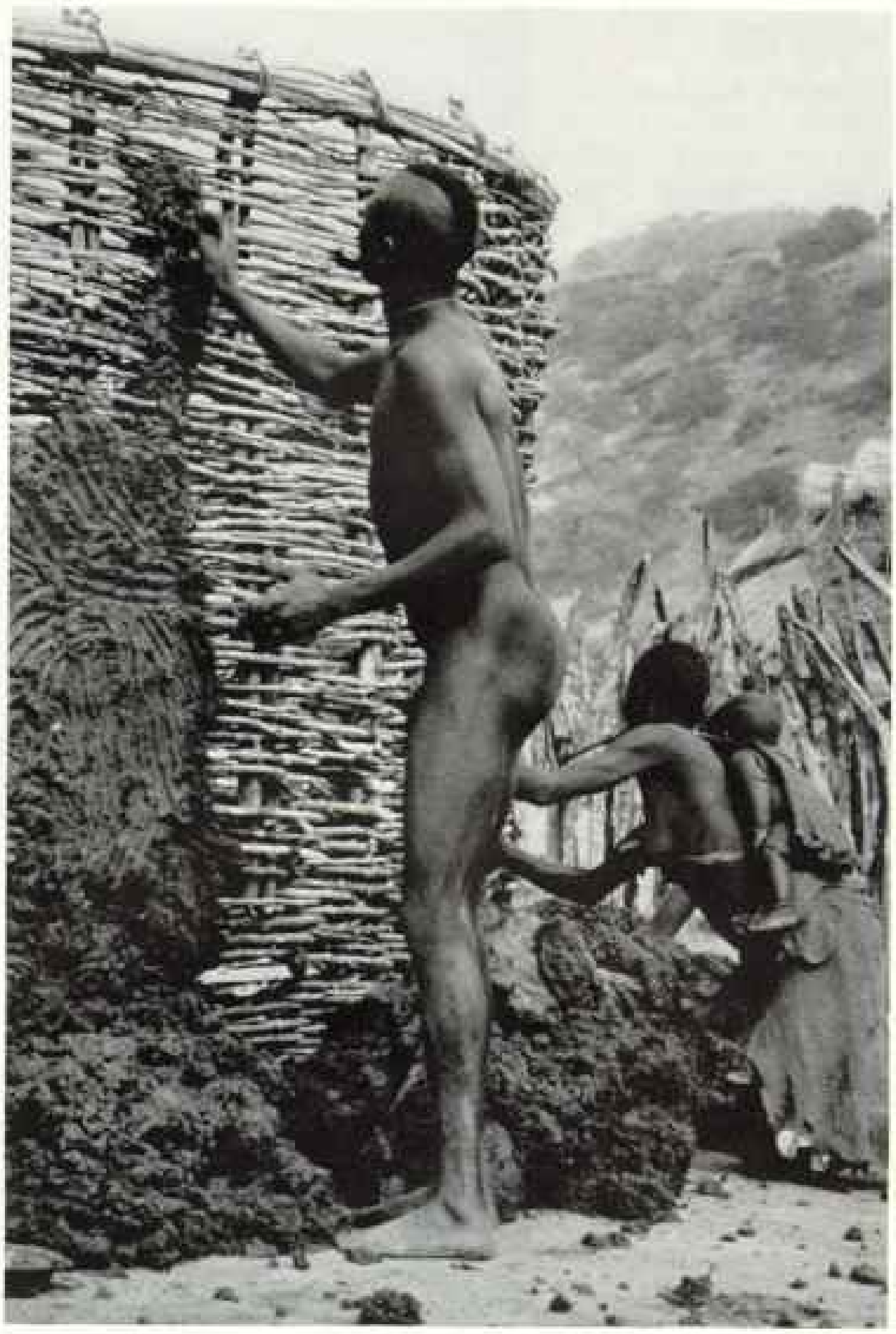
The husband supplies a goat and beer for a family feast at the father-in-law's hut and helps cultivate his field for at least one season.

Adultery has become a serious problem since white man's law has substituted fines for old-fashioned beating or spearing. Repeated offenders, however, are sent to jail.

Marital relations are surprisingly good, and divorce is infrequent. The main problem of men who take several wives is keeping peace. When a woman ceases childbearing, she often welcomes a younger wife into the family circle, for then she becomes a lofty matriarch.

Infant mortality exacts a terrible toll in Africa. Children are treated with little love by parents until they have survived the first perilous months. Later, Lotuka family ties are close, and real grief follows death.

We observed some of their funeral customs. After death the deceased's head was covered by a goatskin tightly tied beneath the chin. The body was soon placed in a grave dug beside the family hut. Horns and jaws of animals eaten at the death feast were hung on a pole at the head of the mound.



C. P. A. Strome and Harry Hoogstraal

Mud Taken from Termite Homes Plasters a Lotuka Hut

When a Lotuka needs a new house, he weaves a basketlike framework and smears it with mud. Then dozens of neighbors help lift a conical roof of bamboo and grass. Termite mud is also valued for hard floors.

As soon as the departed one was removed from the hut, relatives sprinkled the dwelling with intestinal contents of a sacrificial goat. Then friends danced around the compound.

In the village we found a platform shading a bound bundle of long poles covered by a leopard skin. Called *nametere*, it symbolized the dead. All persons approaching it for the first time rushed up to wail their sorrow and to greet weeping female relatives.

After a month's mourning, relatives kill an animal. While they feast, they discuss the dead man's successor and payment of his debts. Two years later the bones are dis-

Stamping Feet Raise Dust Clouds at a Rain Dance

Lotuka tribesmen of Sudan's Equatoria Province love nothing better than dancing, whether for sheer entertainment or for rain making, planting, or hunting ceremonies. For days at a time they indulge in sweaty marathons paced by the pounding of drums and the shrilling of whistles.

All work is forgotten as everyone gathers in the village circle. Drummers take positions around a pylon of poles. Each man beating an instrument of different size and tone, the musicians weave insinuating sound patterns that whip the villagers into frenzy.

Hunters dressed only in paint, ivory arm bands, and ostrich-plume helmets prance about wildly and brandish long spears (page 264).

Women on the side lines eagerly await their turn to dance. Unmarried girls go through foot and hip movements slowly and seriously, for they know that prospective husbands are watching. Married women dance with hilarious abandon, chanting songs and waving beer gourds.

This Lotuka village engages in a rain-making dance. The leading hunter occupies a place of honor atop the pylon. Married women (in goatskin skirts) move in for a few turns around the drum poles. Brass helmets on the men gleam through the dust. If times are auspicious and the rain maker is lucky, skies will give forth the water so desperately needed for planting.

C. P. A. Strome and Harry Hoogstraal

Like a Barnyard Rooster, a Tame Ostrich Wanders Past the Men's Club

Male Lotuka reserve special club areas into which they seldom allow women. Only persons of higher rank may sit on or under this platform. Poles in lower left will support conical roofs, as in the background.

interred and placed in a clay pot in a special grave near the village. The open grave is revered for two more months, then closed.

A common characteristic of African society is the individual's desire to belong to a group or a number of interrelated groups. In such a society the individual is ruled by the customs and interests of his community.

Traveling elsewhere in Africa, I saw numerous pitiful examples of detribalized, aimless people bereft of the intimacy of their old societies. By contrast, I found the southeastern Sudan undergoing a relatively painless transition to 20th-century progress. Here the slow, planned intrusion of civilization has not created tribal disruption.

Southeastern Sudan has been administered only since the 1920's. First emphasis was placed on eliminating tribal fights, protecting life, and designating chiefs to regulate communities. Sorcery and witchcraft and their overpowering fear are being extirpated.

Schools have been established for the rudiments of learning. Now more advanced schools meet growing needs.

Free hospitals are maintained in large villages, dressing stations in hamlets. Some of these are staffed by Sudanese trained in Khartoum and the United Kingdom. The need for curative and preventive medicine is, of course, infinitely greater than available facilities.

In order to gain additional benefits, a program of interesting natives in the use and value of money has been inaugurated. Markets for barter and sales, in which almost no interest was formerly shown, are gradually becoming popular.

Twenty-two thousand adult Lotuka men now contribute an annual tax amounting to a dollar each for governmental services.

Western laws cover only such nontribal matters as vehicular offenses, smuggling, forgery, and embezzlement. Chiefs decide most legal cases; English experts try the more difficult ones, including murder. The Lotuka loves litigation; one out of every three taxpayers brings a case to court each year.

Local government is directed either by British district commissioners or by district councils of elected chiefs. District councils replace commissioners when the people have enough experience to govern themselves. This already has happened in northern districts, but in the south progress is slower.

Poorwill Sleeps Away the Winter

The Author, a Biologist, Finds in a Rocky California Gorge the First Conclusive Evidence of a Hibernating Bird

By Edmund C. Jaeger

A CHANCE trip up a rocky California gorge led me, on a recent Christmas holiday, to an important scientific discovery.

Two companions, like myself lovers of camping and the outdoors, shared in the event, which ornithologists have since hailed as one of the most significant of its kind in the past century. A small bird was the principal actor in the drama.

Most residents of the eastern United States and Canada are familiar with the whippoor-will, which repeatedly calls its name in the evening and before dawn. In the western United States lives a close bird relative called Nuttall's poorwill. It is smaller but similar in appearance.

Poorwill Lacks a Whip

The poorwill's voice is perhaps better known than the bird itself. Its charming call note, repeated with marked regularity, often throughout the night, is a simple "poor-will" instead of the "whip-poor-will" of its eastern cousin. Sometimes, if the observer is very near, a third short note, "up," is heard.

Especially in desert regions this nocturnal bird is seen in early evening sitting or flying upward, almost batlike as it dexterously snaps up insects in its short, wide, bristle-fringed beak. It is an inquisitive bird and certainly not timid, for it is sometimes caught by hand.*

On warm summer evenings I have had poor-wills let me come up to within a few feet of them before they flew away. Even then they would retreat less than a hundred feet, generally directly in front and facing me. When driving at night, I sometimes see their big eyes gleaming with a peculiar bright-red iridescence, reflecting the headlights' beam.

The poorwill's strange and somewhat mournful note is generally first heard in our warm southern deserts in late February or mid-March. It persists throughout summer until late October, when suddenly it ceases.

It had always been assumed that the bird's sudden silence in early autumn was due to its migration southward to spend winter in warmer lands below the American-Mexican border. However, there was no direct evidence to support this view. Here, then, was a gap in the poorwill's life history that invited investigation.

I spent a part of the Christmas holidays of 1946 in the Chuckwalla Mountains with two college students, Milton Montgomery and Jerry Schulte. These mountains lie near the southeast tip of California, midway in the Colorado Desert between Salton Sea and the Colorado River. They are a low, rocky range, steep-sided and with many narrow gorges; here and there lie strange, jumbled piles of giant boulders.

We made our camp in the open desert where we could get the early-morning sun. Our days, we decided, would be spent exploring the wild canyons which lead from the flat desert well back into the main mountain mass of deep-red rocks.

Both of the young men who were with me were inexperienced in this sort of desert exploration, and for them every day was filled with hours of high excitement and intense interest. It was an introduction to a strange new world, and every night they talked excitedly of the new experiences of the day.

Treasure in a Canyon Wall

The third vacation morning was to be a day of dramatic discovery. As we walked up one of the numerous minor narrow defiles, Montgomery, the most agile and always leading the way, expressed amazement at the strange contortions of gnarled ironwood roots exposed in small rock crevices. Then he called my attention to what he thought was another gray-barked root wedged in the canyon's wall, about 2½ feet from the sandy bottom.

"No, no, that's no root!" I exclaimed. "That's a bird! And a poorwill at that!"

So nearly did its brownish-gray, black, and white mottled plumage match the gray of the granite, so neatly did its body almost fill the cuplike rock crypt in which it sat that only the most careful observer would ever have noticed it (page 275).

"It must be dead or sick," said Schulte. "Look, it doesn't even move when we talk."

For more than ten minutes two of us watched the bird while Montgomery ran back to camp to get the camera. When he returned, we took several pictures of the well-camouflaged creature, still undisturbed in its cranny. Then I reached forward and touched it gently.

There was no response. I stroked its back and wing feathers; still not the slightest move-

* For a painting and description of the poorwill, see the National Geographic Society's *Book of Birds*, Volume II, pages 48 and 49.

Don Hicks

Author and Students Photograph a Poorwill's Hide-out in California's Colorado Desert

Chance discovery in this canyon made ornithological history. Men had always assumed that the poorwill, western cousin of the eastern whippoorwill, flew south for the winter, but a cavity in the rock exposed a bird in the first authenticated example of true avian hibernation (opposite). Dr. Edmund C. Jaeger (in jacket) is assisted (left to right) by Ross Detwiler, Jack Caudry, and Frank Sherman.

ment. Finally I picked up the poorwill and began moving it about in my hands, first cautiously, then with greatest freedom, the better to examine its strange beak and small feet. I noticed that both the closed eyelids and feet were cold (page 279).

The "Dead" Bird Winks an Eye

I decided to put the bird back into its crypt, but as I was doing so I noticed that it momentarily opened and shut an eye.

"This is no dead bird," I said. "Do you suppose it could be in some state of winter sleep?"

At that moment I recalled the experience of my ornithologist friend, Wilson C. Hanna, who had told me of a strange discovery he had made some 40 years earlier. During the winter he had found a group of white-throated swifts in a comatose condition, hidden deep in a damp, cold rock crevice on Slover Mountain near Colton, California. Then too there came to mind the recent account by another ornithologist of a poorwill found inside a hollow log in early spring.

Unfortunately we had to leave for our home in Riverside too soon to make further observations. But 10 days later I came back to the canyon with Lloyd Mason Smith, director of the Palm Springs Desert Museum, hoping if possible to show him my remarkable find. Sure enough, there was our poorwill still in its rock niche with no sign that it had moved so much as a feather.

I now confidently reached forward and gently picked it up. But as I did so, it surprised me by making several strange "puffy" sounds, as if expelling air from its lungs.

Kenneth Middleton

Birddom's Rip Van Winkle Blends Perfectly with the Mottled Granite of Its Bedroom

"No, no, that's no root! That's a bird!" exclaimed the author when a student found this specimen, half dead, half alive, in its chamber. Deep in a chloroformlike trance, it passed portions of four winters there until it died or moved away. Poorwill is one of the goatsuckers, a class of birds so called because Old World farmers, hearing their cries by night, imagined they were stealing milk from barnyard animals.

Then it opened wide its jet-black right eye and proceeded to amaze us further by making a variety of high-pitched, squeaky, mouselike sounds. A moment later its broad mouth gaped as if yawning.

I handed my sleepy poorwill over to Mr. Smith so he could have the experience of holding it. Again it made its strange whining notes. Then suddenly it raised both its long wings in vertical position and there held them rigidly outstretched.

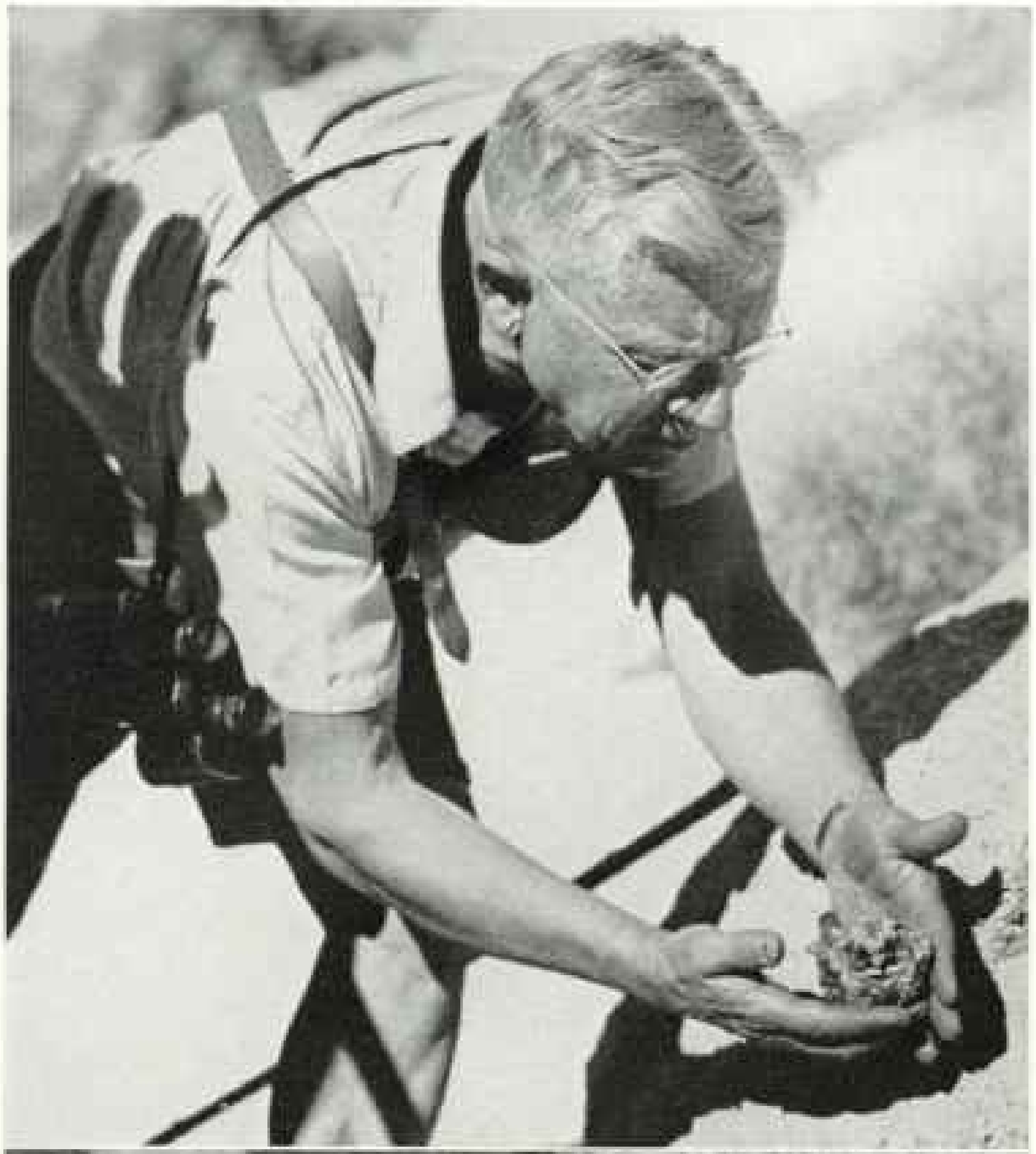
We waited several minutes and then tried to place the wings at rest in normal position. But every time we thought we had about accomplished it, the poorwill as quickly raised them upward, so high above its body that the wing tips almost touched. All this time its eyes remained closed.

After further trials we got the wings back into nearly normal resting position; we then returned the bird to its crypt and left for camp. The morning temperature was about 42° F., and the silent skies were gray with a thick covering of cirrus clouds.

Poorwill Wakes and Flies

In the afternoon we returned to continue our observations. The poorwill was still in the position in which we had placed it and had apparently made no effort to adjust its wings; the feathers were still somewhat ruffled. Mr. Smith picked up the bird, then decided to put it in my hand while he photographed it.

But before he could accomplish the transfer, the seemingly sleep-docile bird whipped open its wings and flew away in normal flight to an ironwood tree some 40 feet up the canyon. We tried to catch it, but it again



alertly flew away, this time in among some rocks so high above us that we were unable to get at it. It was the last time we saw our bird that season.

On this day we saw fresh coyote tracks in the sands just below the bird's resting site. The position of the footprints gave full indication that the animal had even stopped and turned toward the bird. Not only that, but claw marks in the sand indicated he had remained there a number of minutes.

The coyote may have looked right at the bird, for it was almost at the level of his eye. But it is also quite possible that the bird, when in such winter torpor, gives off no scent and that the almost perfect camouflage

Sleepy Will Endures Hands and Scales Without a Peep

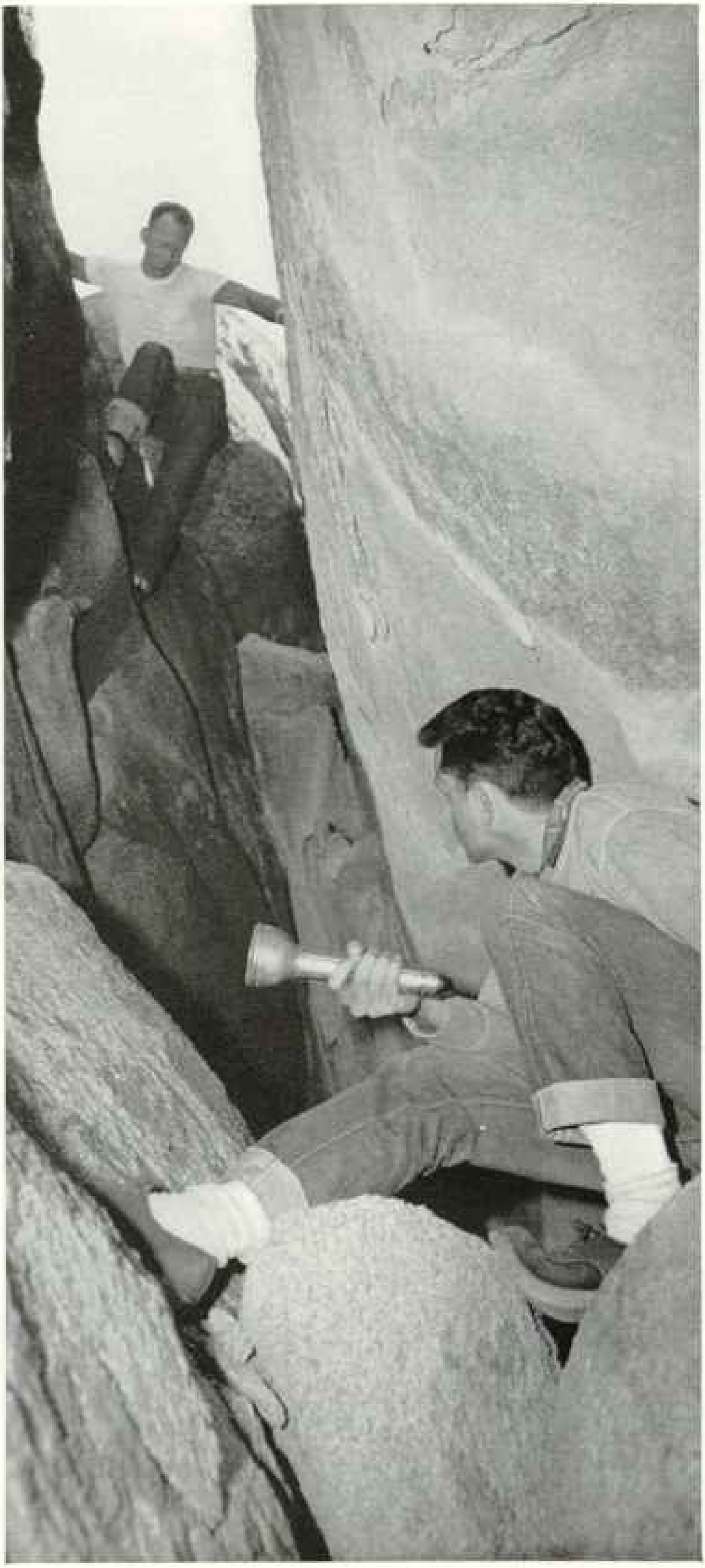
Dr. Jaeger visited the bird at two-week intervals; only once did it wake up and fly away (page 275). One winter it slept 88 days without food. Body fats burned so slowly that weighings showed barely perceptible losses.

→Named for a native lizard, the Chuckwalla Mountains rise abruptly out of the sands near the southeastern tip of California, midway between Salton Sea and the Colorado River. Here the author's party follows a desert trail on a week-end field trip.

Lower left: The desert exposes a dike, an intrusion of igneous rock which, having flowed surfaceward and cooled, packed a fissure as tightly as the filling in a tooth.

Right: A ground-hugging species of the spurge family forms the tracklike markings studied by Lloyd Mason Smith. Indians valued the plant's milky sap as a snakebite remedy; hence its common name, rattlesnake weed.

Briant Brush, Dale Gustafson, Don Ollis



deceived even the clever eyes of "Don Coyote." At any rate, our bird had not been disturbed.

All these observations put our minds in a high state of excitement. "Is it possible," we asked, "that this bird is just awaking from a state of true hibernation?"

What biologists call "winter torpor" is a phenomenon well known among many kinds of animals from insects and fish to bears and bats. It is found even among birds, notably the hummingbird. But it is not a true hibernation.

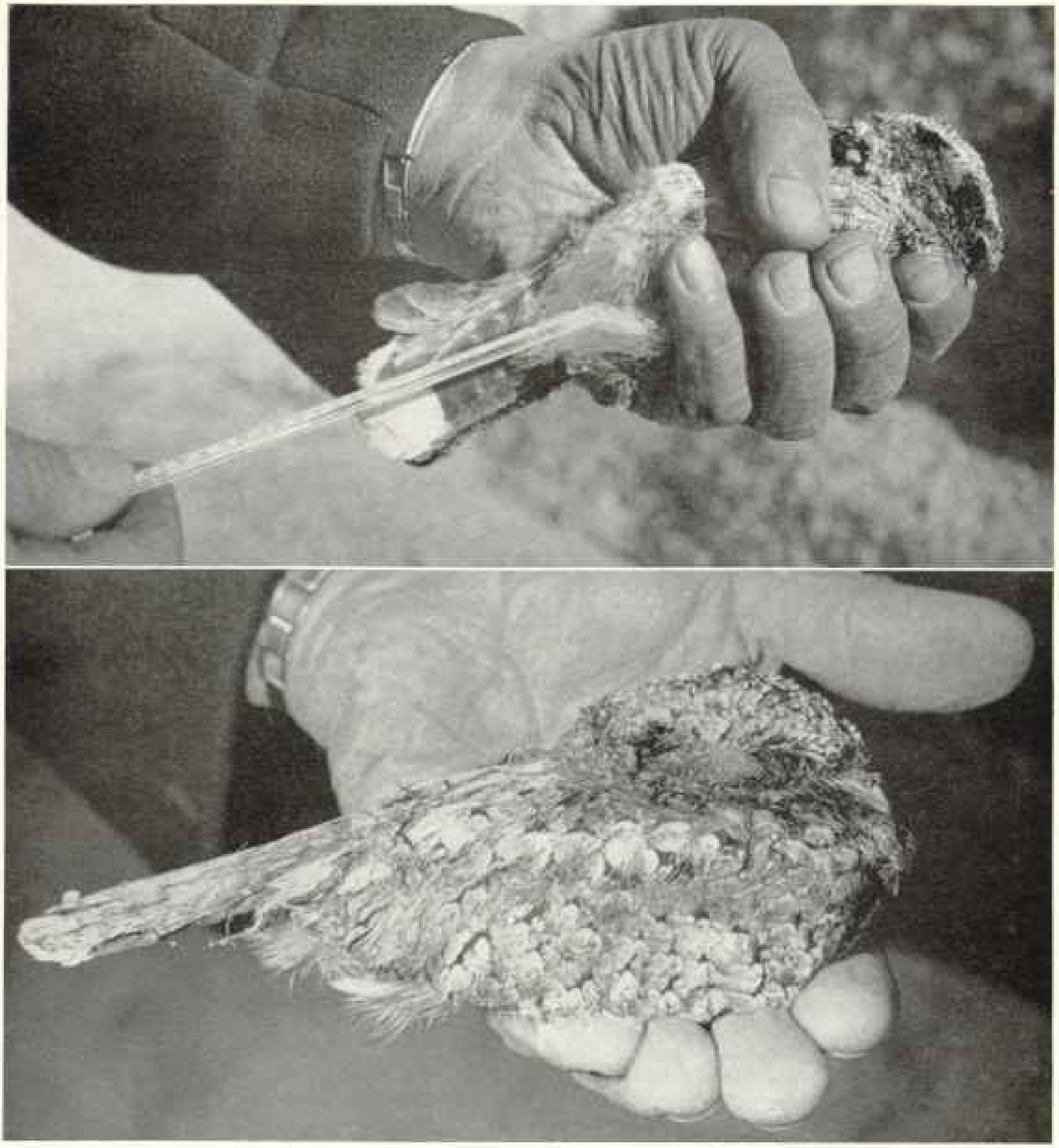
That term is reserved for a specific condition, found, for example, in mammals such as the hedgehog. In true hibernation there is in winter not only extreme drowsiness but also a marked lowering of body temperature and nearly complete cessation of the most essential body functions. Such a physiological state had never been known among birds.

In late November of the following winter we again visited "poorwill gorge," as I came to call it. To my surprise and joy, there was a poorwill, presumably the same one, in the identical rock and in the same torpid condition. I decided to begin a series of observations and experiments at once to determine what was really going on.

First of all, I placed a numbered aluminum band around the short lower leg so I could be certain in the future that

Biologists Explore a Dark Crevice

Cecil E. Johnson (with flashlight) and Frank Sherman hoped to find another hibernating bird, but only the one turned up.



Dale Gustafson and Kenneth Middleham

Poorwill, the Seldom-seen Night Singer, Makes a Rare Daytime Appearance

Above: The thermometer reads some 64° F., a 42° drop from the bird's normal temperature. Below: Hand strokes, shouts, and even dazzling lights beamed into its eye all failed to disturb the hibernator. A stethoscope detected no heartbeat; a mirror caught no mist of breath.

I was always observing the same bird. Then I proceeded to visit the place weekly, although it meant a 250-mile round trip each time.

Knowing that one of the true tests of hibernation is a low body temperature, I at once began a series of internal readings with a special quick-recording thermometer. The tests were made every two weeks during the 88 days the bird remained in its strange lethargy.

To my surprise, the mercury column went way down, as low as 64.4° F., with only very slight variation upward; never did it go above 67° F. The normal temperature of active poorwills is known to be about 106° F.

At the same time, a series of weight records was begun, and these, too, confirmed my belief that the bird was in a very low stage of metabolism. Getting the small bird in my hand and putting it on the scale pan was no problem at all, for in all this procedure it was completely docile. At each weighing there was a fraction less bird to weigh. Very gradually the fats and other tissues were

being consumed to maintain the slowly running current of life.

I realized more fully than ever the depth of its "hibernation slumber" when I visited the poorwill on December 8, 1947. The day before, a storm of sleet, hail, and wind had descended upon the Chuckwalla Mountain area from the west. In its shallow crypt the poorwill was exposed to much of the storm's fury. The tail feathers were badly beaten up, so much so that they remained tattered all the rest of the season. Yet the bird in its strange half-dead, half-alive state had sat apparently oblivious of the buffeting.

One night in January we visited our bird and found it "sleeping" with its right eye wide open. I immediately saw an opportunity for another experiment. One of the boys had with him a small fountain-pen-type flashlight, giving a 7-candlepower beam. Holding the flashlight within two inches, we directed the beam directly into the open eye, holding it there a full minute. There was no show of discomfort and not even the slightest effort to close the eyelid; nor could we detect any other body response.

Mirror Detects No Breathing

A cold metal mirror held up to the bird's small tubular nostrils showed no moisture condensation such as would be seen if there were any perceptible breathing. A stethoscope held over the chest gave us not even the faintest sound of a beating heart.

Yet this same bird two months later came back, within a space of a few days, to a state of active normalcy and flew out of our hands when we picked it out of its winter quarters in the granite rocks.

In the season of 1949-50, from late November to February, we made our fourth series of observations at the permanent winter headquarters of this same poorwill. We took motion pictures while we re-enacted our first discovery of the poorwill and the subsequent experiments carried on over four years. Our film star was the little poorwill which had helped us establish one important biological fact: that birds do hibernate.

As soon as these findings were published in Condor, the official Journal of the Cooper Ornithological Society, there was enormous response from biologists, especially ornithologists, all over the world. Letters of inquiry poured in from England, Germany, France, Denmark, Sweden, and even faraway Australia. Notices and reviews appeared in magazines and many journals.

Since before the times of Aristotle men have speculated on the possibility of bird hibernation. In the 18th century English naturalist Gilbert White toyed with the idea again and again, especially in the case of swallows. Even as late as 1935 an American ornithologist wrote an article discrediting the continued repetition of the hibernation theory after 2,000 years. As a recent example, he cited its use to explain persistent failure to locate definitely a winter home for the chimney swift.

One of America's leading ornithologists, W. L. McAtee, wrote in the November-December, 1950, issue of Audubon Magazine:

"Reviewing the literature on bird torpidity in 1947, I had to conclude, up to that time, that there was no definite evidence that any bird can survive a full season of genuine hibernation. That gap in knowledge has now been filled. . . . Two thousand years after the time of Aristotle, Edmund C. Jaeger, Professor in Riverside College, has recorded the first scientifically observed instance of the trait."

The banded poorwill was seen only for a few weeks during the 1949-50 season. It then disappeared. What its fate was no one knows; it may have died or fallen prey to some predator. I do not think it was taken by any human hunter, for the chances of its being found were too few. Time after time I had tried to see if the students I took out with me could detect the bird even when told that they were near and about to walk past it. Not one found it without my aid.

Doubtless sometime in the future someone will find another hibernating poorwill, but it may not be soon. Evidently the birds are ordinarily very clever at hiding themselves, seeking out deep rock crevices or other places of secure concealment.

When I asked a Navajo Indian lad if he knew where poorwills go in winter, he immediately replied, "Up in the rocks." It is quite possible that these pastoral people have at times observed this bird in its winter torpor.

Scarce Food May Mean Longer Sleep

It is my belief that the depth of "hibernation slumber" differs from season to season, varying according to a number of external conditions. Among these is the available supply of flying insects, the birds' chief food.

During the winter of 1948-49 the banded poorwill was in its lethargic state for fully 88 days. During all this period I saw no moths flying about my nightly campfire. But as soon as the insects reappeared, the bird resumed its active state. Evidently the same conditions that bring flying insects into activity operate also to stimulate into normalcy the bird's fundamental body functions. At least in the case of our poorwill we must conclude that it is not temperature alone that determines the length of the hibernation period.

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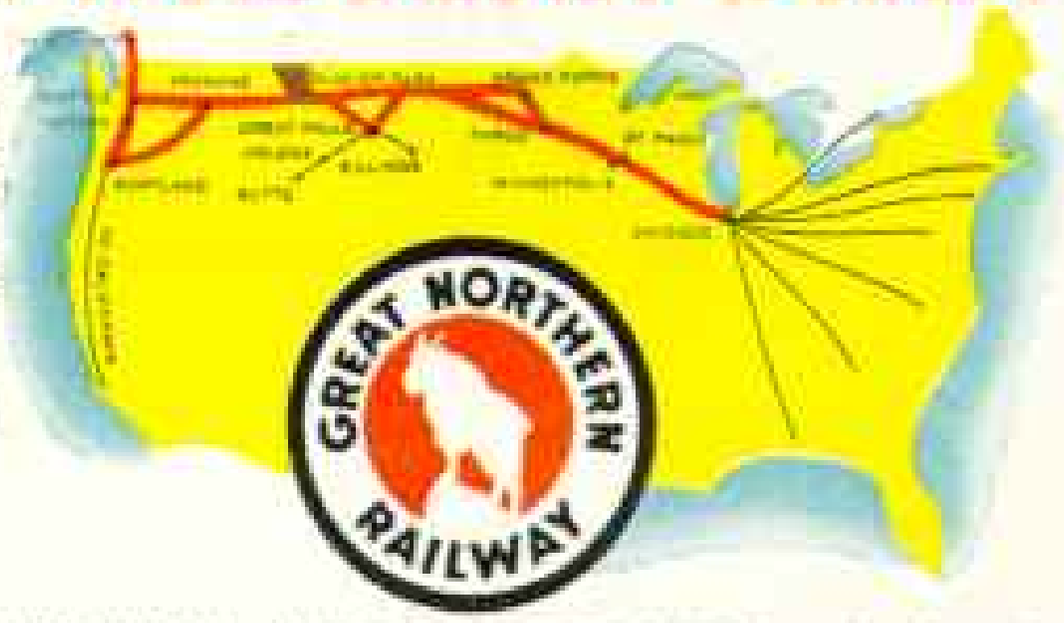

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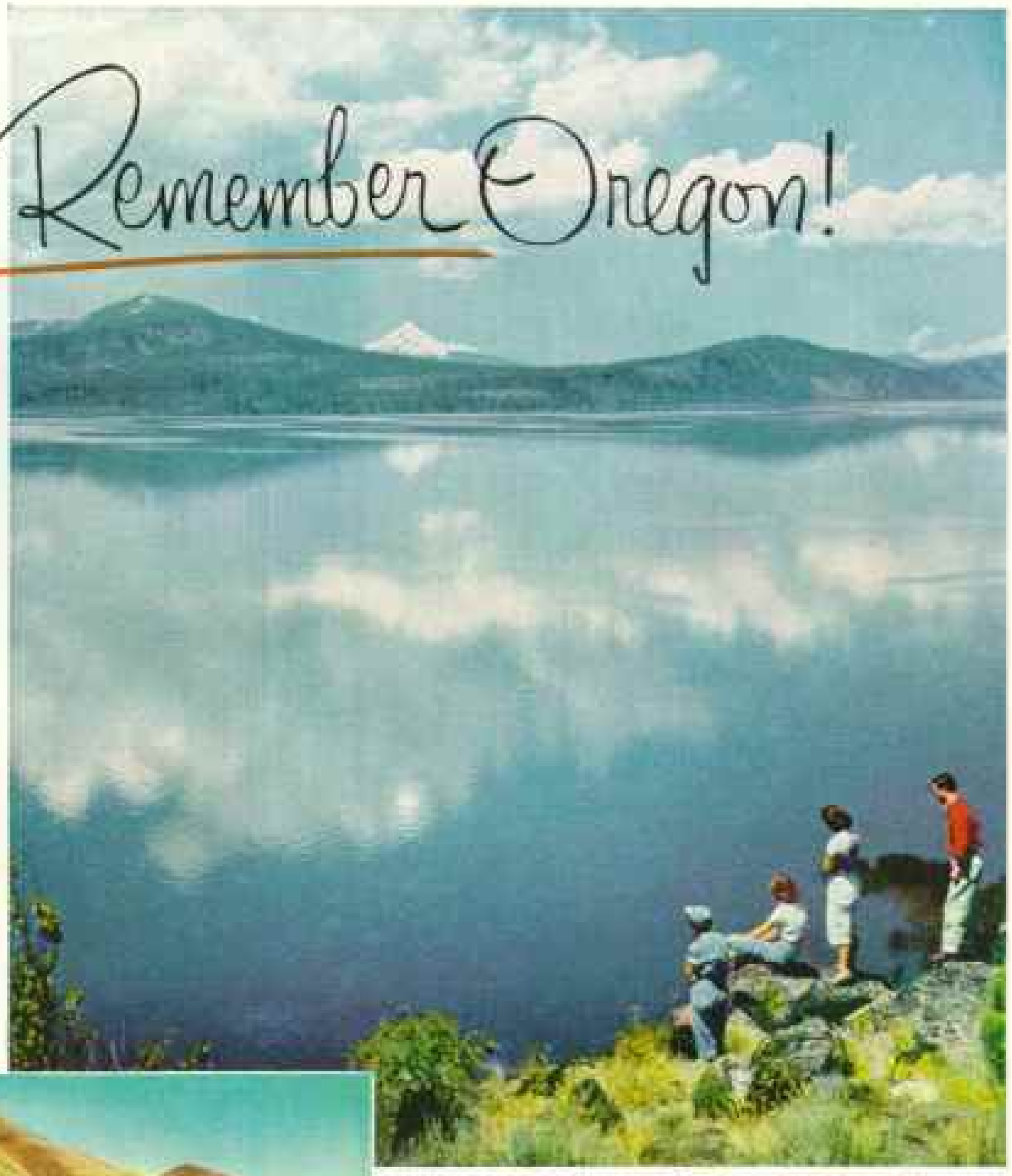

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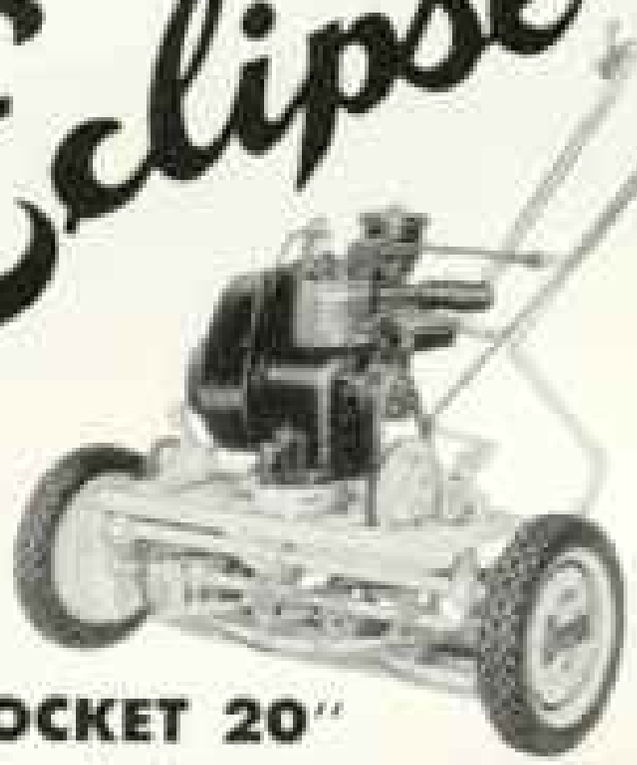

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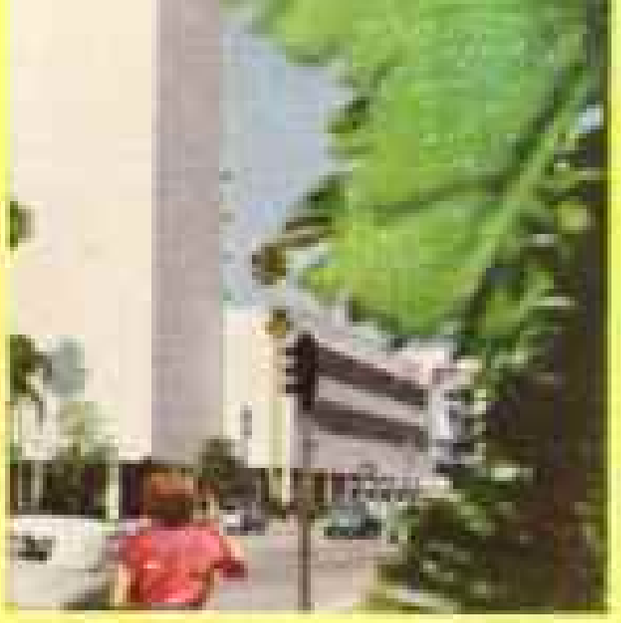
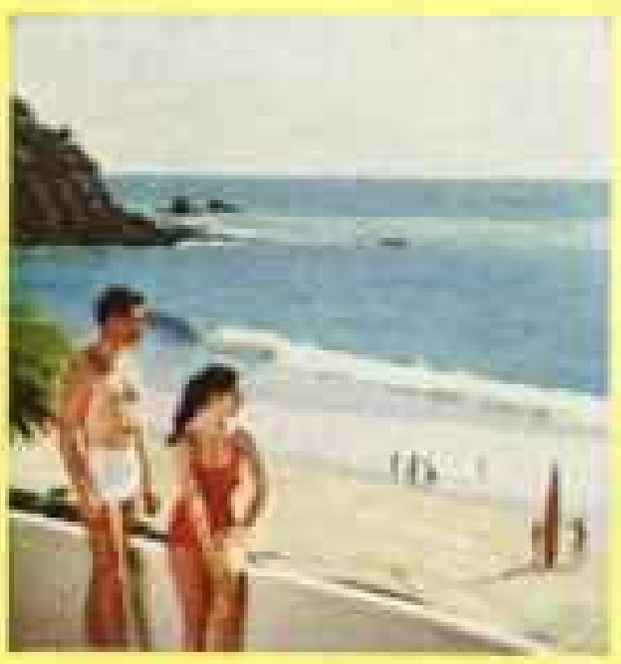


Shopping amid palms

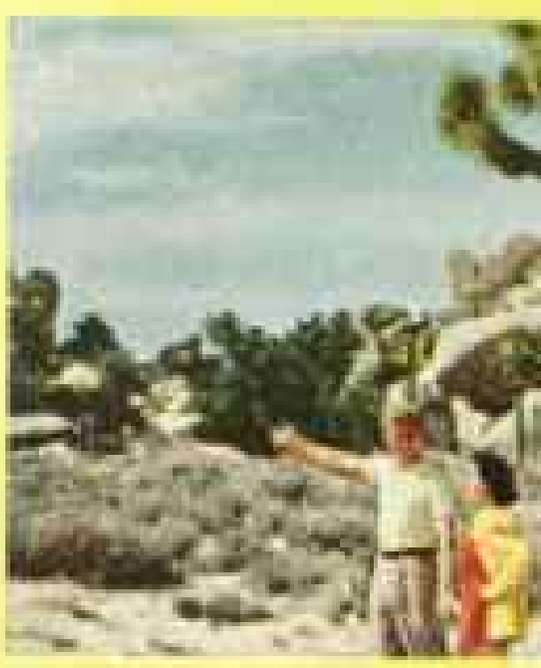
Biggest regatta

Palisade Glacier

Hollywood night life



Seaside patio



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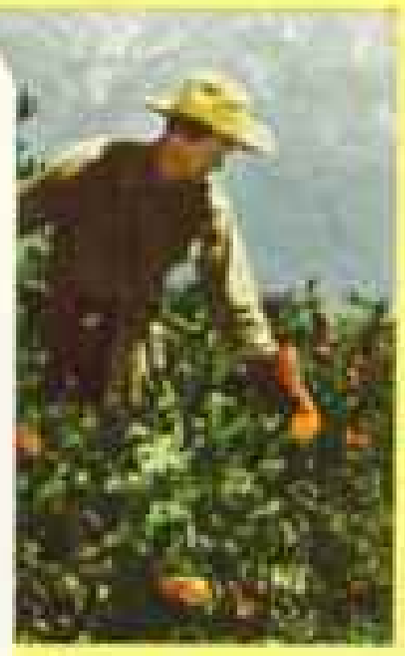
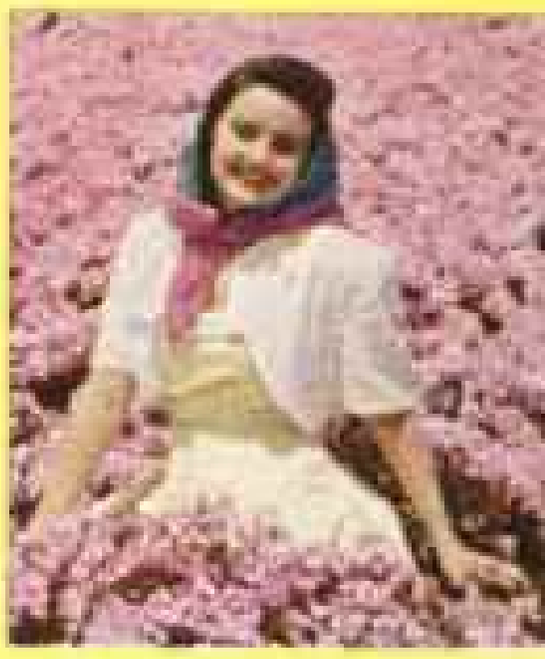
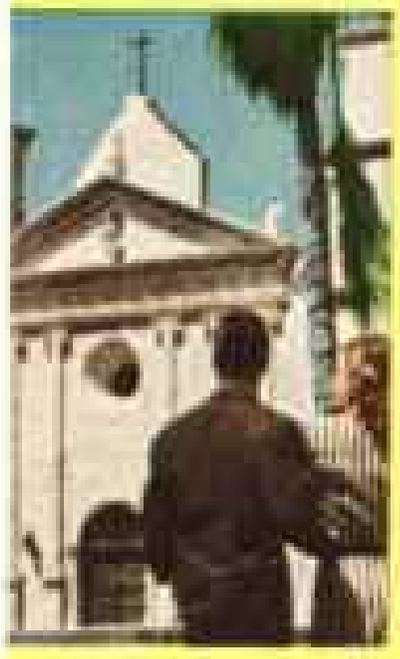


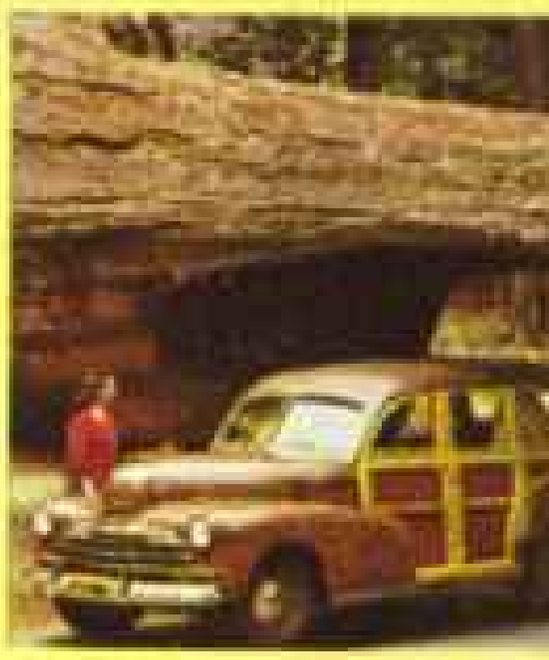
Winter oranges



Geranium field, winter



Spanish mission



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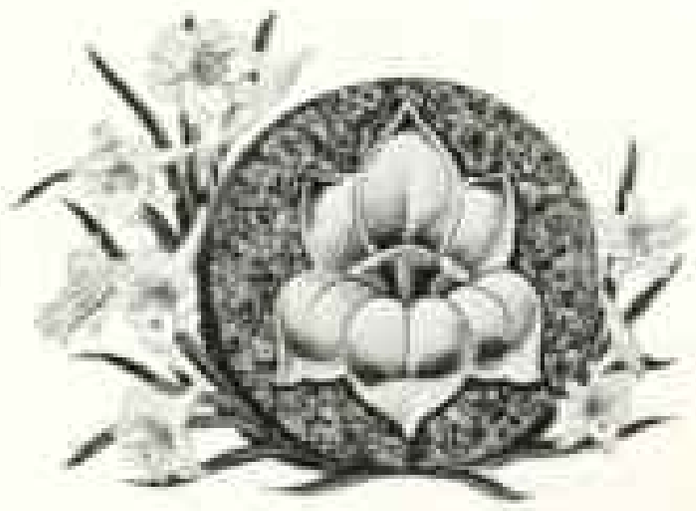

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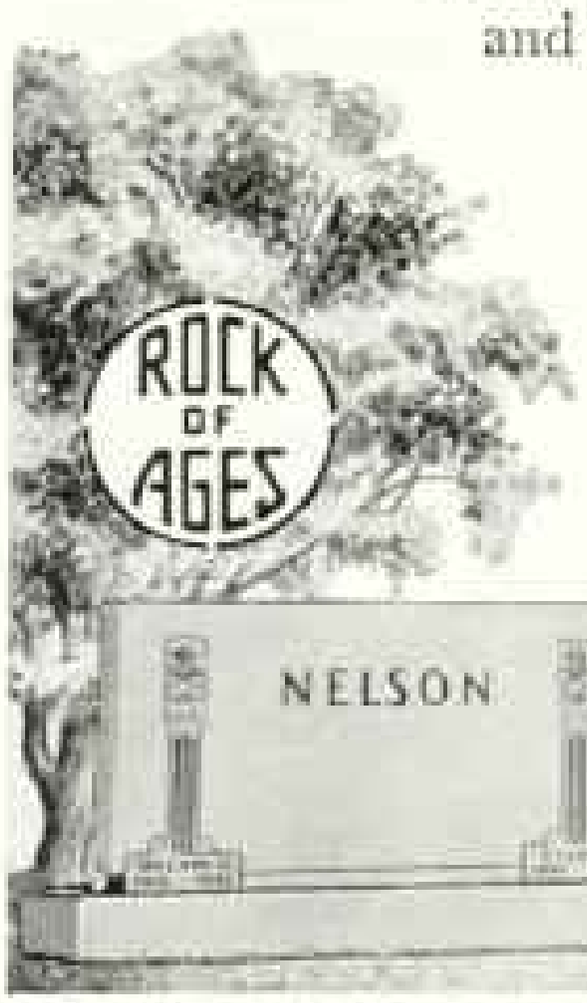
This is the time of year—the lengthening days give promise that Spring is close at hand—when people soon will be visiting their family cemetery plot to find spiritual strength and courage. For the family monument expresses, as nothing else can, all those qualities they hold most dear. It is a living and permanent symbol to those who but a short time ago were with them—working with them—joking with them—guiding them—*understanding* them.

The monument in your cemetery represents a personal family bond. It is a thought, a proud tradition . . . a symbol that will live on for generations to speak of you and yours. In choosing the right family monument, you need the counsel and help of a trusted dealer. Look for integrity and high standards. Look, too, for the Rock of Ages trademark in the granite, for this is your assurance of value.



Ask your Authorized Rock of Ages Dealer for a free copy of "How To Choose a Family Monument." You'll find his name in the Classified Section of the Telephone Directory, or write Rock of Ages, Barre, Vermont.

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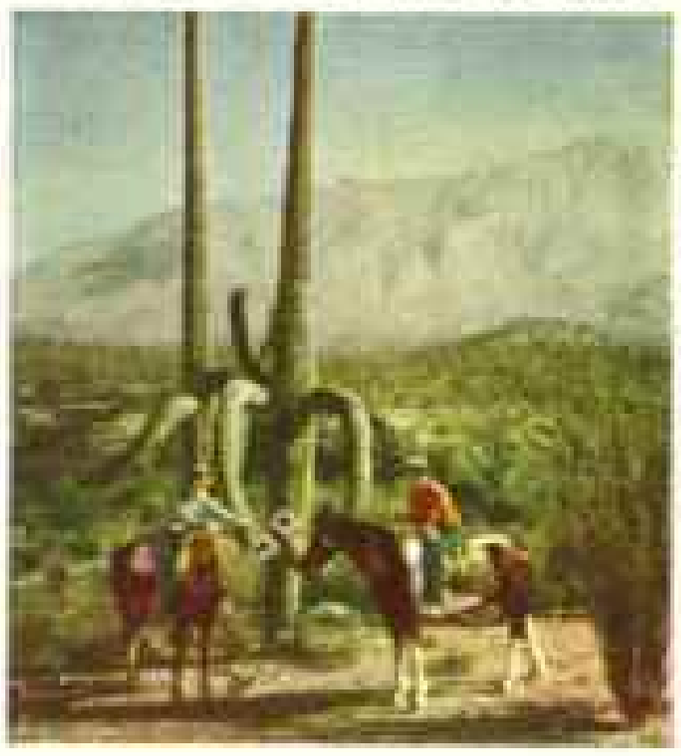

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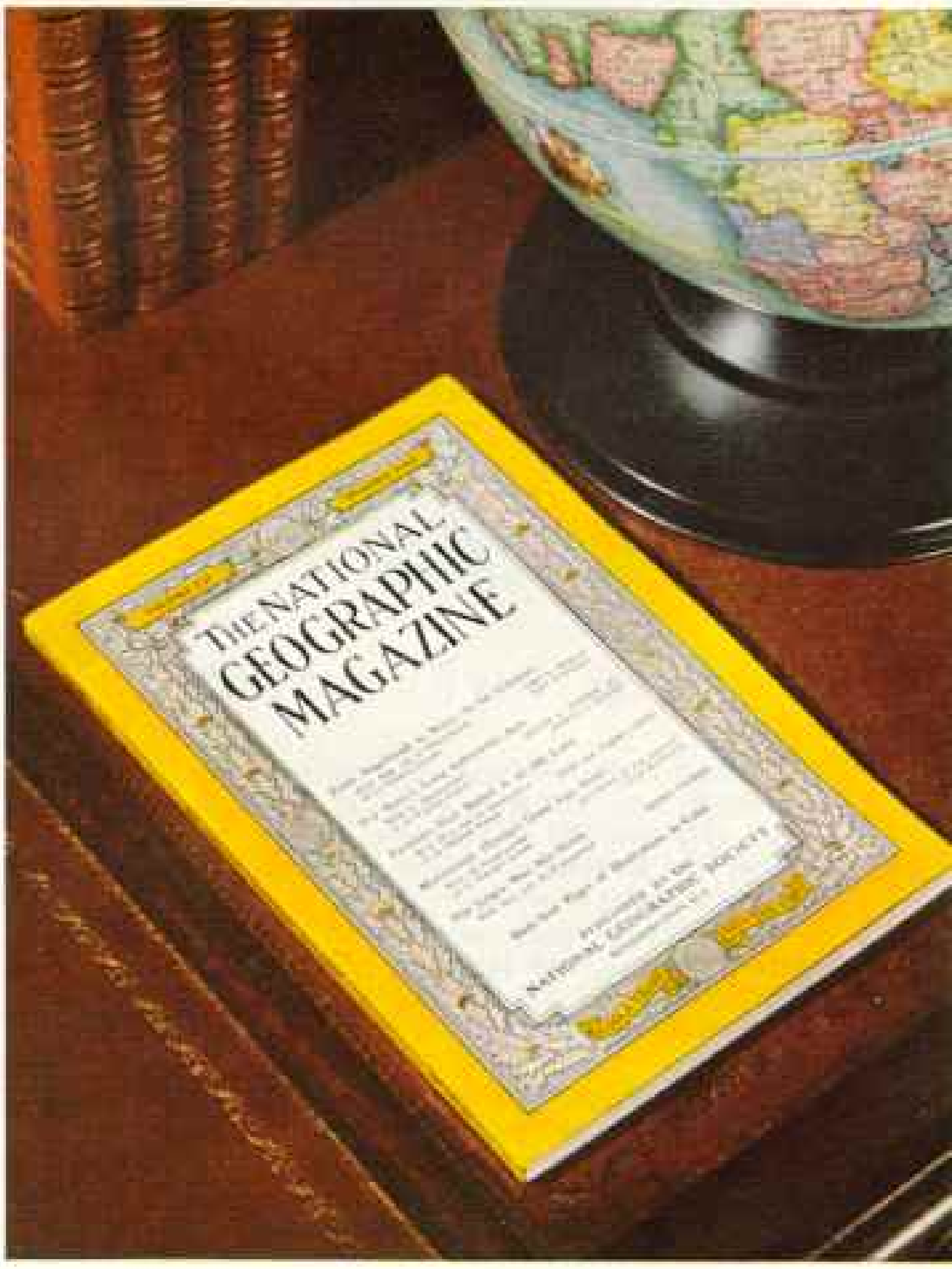

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What about your heart?

Perhaps no other part of the body has been studied as intensively as the heart. Today new techniques are being developed to reveal more and more facts about how the human heart works.

A great deal has been learned about the sources of energy which enable the heart to perform its Herculean task of driving five to ten tons of blood through the arteries and veins every day—365 days a year—for the 68 years of the average individual's lifetime. In this period, the amount of blood pumped may reach the impressive total of 250,000 tons. Moreover, the heart must function continuously—resting only a fraction of a second between beats.

Studies in the diagnosis and treatment of heart disease have also led to improvements in the interpretation of heart murmurs, electrocardiograms, and X-ray photographs of the heart and blood vessels. In addition, a better understanding of the action of heart drugs has been provided, so that they can now be used with greater benefit to patients. These and many other advances have made it possible for doctors to diagnose and treat heart trouble more effectively now than ever before.

Encouraging as these advances are, the fact remains that heart disease is still the leading cause of death. Today, in one form or another, ailments of the heart and blood vessels affect some nine million people in our country.

It is wise for everyone to take certain simple precautions to protect the heart so that it may continue to do its job as one grows older. Here are some of them:

1. **Do not wait for the appearance of symptoms** that may indicate heart trouble—shortness of breath, rapid or irregular heart beat, pain in the chest—before seeing the doctor. It is far wiser to arrange now—while you are feeling perfectly all right—to have a thorough health check-up.

2. **Keep your weight down.** Excess pounds tax both the heart and the blood vessels. Doctors are now stressing the importance of diet in the treatment of various heart and blood vessel disorders.

3. **Learn to take things in your stride.** Avoid hurry, pressure and emotional upsets. These can cause your heart to beat faster and put an extra burden on your circulation.

Even if heart disease should occur, remember that most people who have it can live just about as other people do—but at a slower pace. In fact, when patients follow the doctor's advice about adequate rest, weight control, and the avoidance of nervous tension and strenuous physical exertion, the outlook is reassuring.

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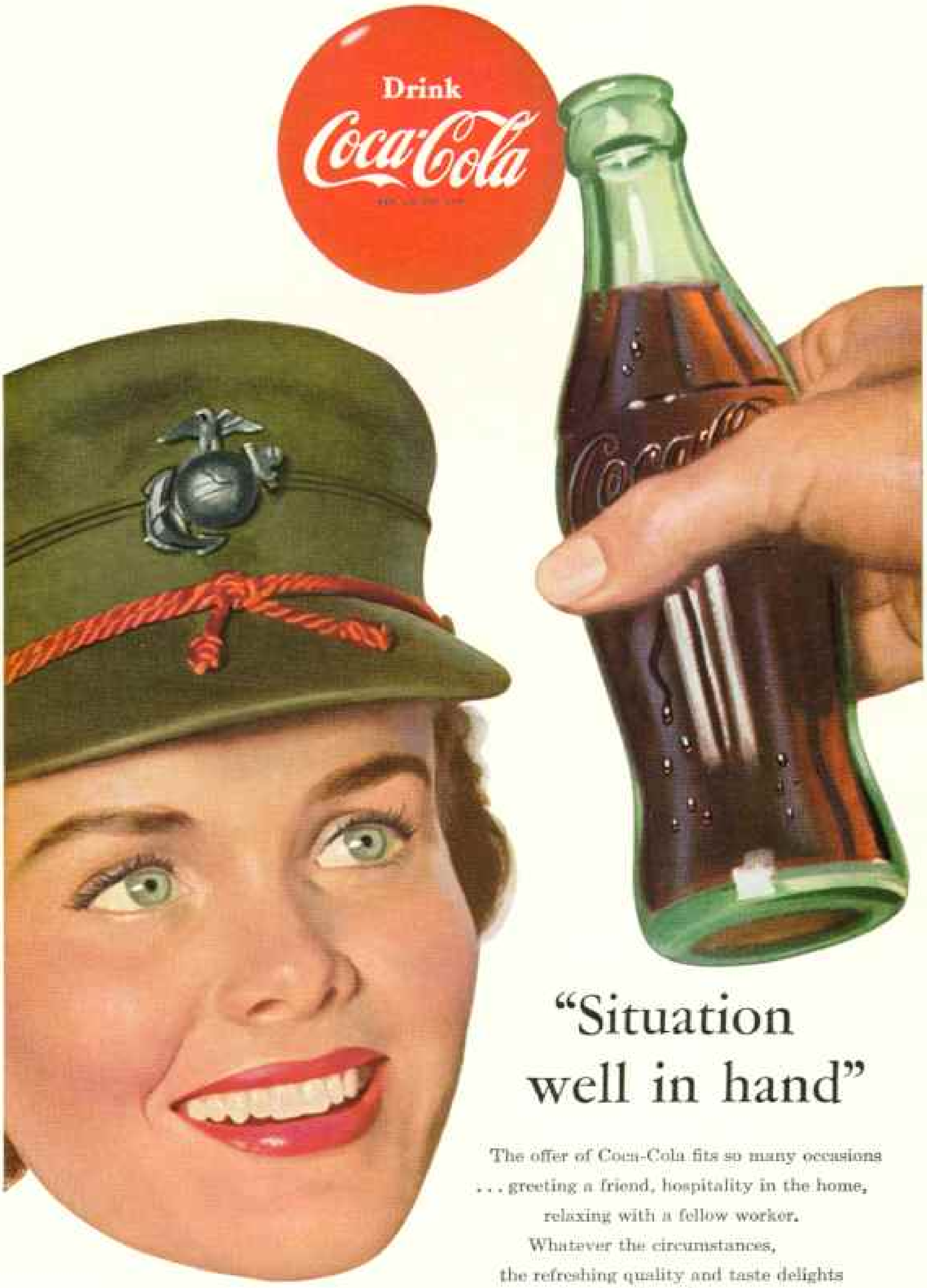

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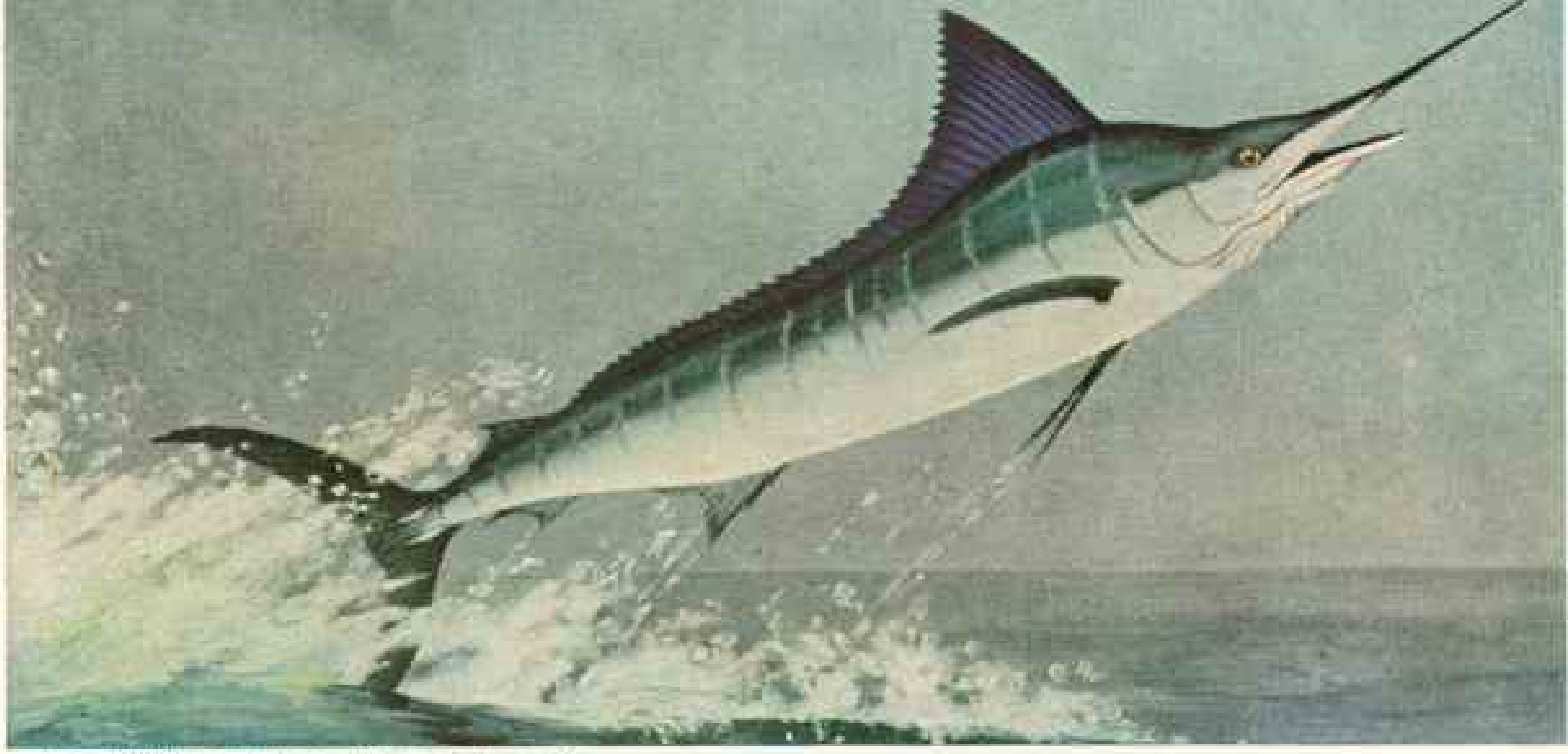

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